SEP 21 1885
421-21

THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART.

VOL. XVIII. — No. 508.] SATURDAY, SEPTEMBER 19, 1885. PRICE, 15 CENTS.

BARTLETT, HAYWARD & CO.

(Established, 1836.)

ARCHITECTURAL IRON-WORK,

HOT-WATER HEATING.

Plans and Specifications and the Superintendence of the Heating and Ventilation of Public Buildings a specialty.

BALTIMORE, MD.

W. & J. SLOANE,

ARTISTIC CARPETINGS,

— AND —

UPHOLSTRY GOODS,

ANCIENT AND MODERN ORIENTAL RUGS.

BROADWAY, EIGHTEENTH AND NINETEENTH STS.

NEW YORK.

JAMES P. WOOD & CO.

JAMES P. WOOD. JOSEPH WOOD.

STEAM-HEATING, VENTILATING, AND COOKING APPARATUS, ETC.

39 SOUTH FOURTH STREET, PHILADELPHIA PA.

MITCHELL, VANCE & CO.

Designers and Manufacturers of

GAS FIXTURES,

ORNAMENTAL METAL WORK, CLOCKS AND BRONZES.

ARCHITECTS' ORDERS SOLICITED.

Special designs submitted on application.

WAREROOMS, 836 and 838 BROADWAY, MANUFACTORY, 24th and 25th STS. and 10th AVENUE, NEW YORK.

T. ASPINWALL & SON,

TILES of all descriptions for Floors, Walls, Hearths, Fireplaces and Decoration generally.

MANTELS, GRATES, AND OPEN FIREPLACES.

BRASS FENDERS, ANDIRONS, ETC.

Sole Agents for, and only direct importers of MINTON'S and the CAMPBELL TILE CO.'S TILES.

75 & 77 W. 23d St., (Masonic Temple) NEW YORK.

SEYSSEL ROCK ASPHALT.

FOR SIDEWALKS, FLOORS, CELLARS, ROOFS, ETC.

BITUMEN DAMP COURSE.

DAMP RESISTING SOLUTION.

ACTINOLITE ROOFS,

29 Waverley Place, NEW YORK. } E. H. WOOTTON N. Y. Mastic Works. { Arcade Bldg, R'ms 14, 16 & 17, CHICAGO.

J. W. TAYLOR, CHICAGO. 146 LA SALLE ST.

NEW ARCHITECTURAL

Send for Circulars, PHOTOGRAPHIC SERIES. and Club rates on American and Foreign Periodicals.

OHIO BUILDING STONE CO.

QUARRYMEN AND DEALERS IN

BUFF AND BLUE OHIO SANDSTONE.

OFFICES:

127 SUPERIOR STREET, CLEVELAND, O.

BRANCH OFFICES:

247 BROADWAY, NEW YORK, N. Y.

350 FIFTH AVENUE, CHICAGO, ILL.

49 FIFTH AVENUE, PITTSBURGH PA.

BRICK AND STONE WATER-PROOFING CO.'S

Process for Preserving from Decay

BROWN SANDSTONE AND LIMESTONE,

ALSO ALL MARBLES AND BRICKWORK,

From weather-stains and discolorations of any kind. It is not oil, varnish, soluble glass or paint. It is a process which converts the outer layers into an indestructible material without alteration in other respects.

OFFICE, 55 BROADWAY, ROOM 43.

Established 1871.

CHARLES R. YANDELL & CO.,

IMPORTERS AND MANUFACTURERS

CABINET FURNITURE.

DECORATIVE PAINTERS.

Specialities:

Illuminated Leathers, Hand Painted Wall-Papers, Cordova Chairs, Curtains and Textile Fabrics.

Modelled Fibrine, a new patented material for ceilings and walls.

NO. 6 EAST EIGHTEENTH STREET, FIFTH AVENUE, NEW YORK.

WHITTIER MACHINE CO.

Manufacturers of Steam and Hydraulic

ELEVATORS,

STEAM ENGINES, BOILERS, AND MACHINERY.

1176 TREMONT ST., BOSTON.

NEW YORK OFFICE, 91 LIBERTY STREET.

CHAS. WHITTIER, *Pres't.* A. C. WHITTIER, *Treas.*

L. S. GRAVES & SON,

PASSENGER AND FREIGHT

ELEVATORS.

NOISELESS, SAFE AND DURABLE

CENTRE STREET, ROCHESTER, NEW YORK

NEW YORK OFFICE, 46 COURTLAND STREET.

STOKES & PARRISH,

30th & CHESTNUT STS., PHILADELPHIA, PA.

Hydraulic and Steam-Power

ELEVATORS.

SAFETY, SPEED, AND ECONOMY.

All kinds of Hoisting Machinery a specialty.

NEW YORK OFFICE, - - 95 & 97 LIBERTY STREET.

OTIS

PASSENGER AND FREIGHT

ELEVATORS,

A SPECIALTY FOR A QUARTER OF A CENTURY.

For Hotels, Office-Buildings, Stores, Warehouses Factories, Mines, Blast-Furnaces, etc

OTIS BROTHERS & CO.,

NEW YORK, BOSTON, AND PHILADELPHIA.

CRANE'S

ELEVATORS,

CHICAGO WORKS, 10 N. JEFFERSON STREET.

NEW YORK OFFICE, 40 & 42 Wall St. — BOSTON OFFICE, R'm 80 Mason Build.

PITTSBURGH, PA., 111 Water St., — CLEVELAND, OHIO, Blackstone Build.

ST. LOUIS, MO., Cor. 5th & Chestnut Sts. — MINNEAPOLIS, MINN. Hennepin Block.

MOORE & WYMAN,

ELEVATOR

— AND —

MACHINE WORKS.

37 FOUNDRY STREET, BOSTON, MASS.

J. F. DALTON, [Established 1876.]

GAS-PIPING,

106 SUDBURY STREET, BOSTON, MASS.

Invitations for estimates solicited.

THE UNITED STATES ENCAUSTIC TILE CO., Indianapolis, Ind.

PLAIN, GEOMETRICAL & ENCAUSTIC

TILES, FOR FLOORS

Public Buildings and Private Residences.

HIGH ART MAJOLICA TILES for Mantel Facings, Friezes, Furniture, etc.

GLAZED AND ENAMELLED TILES for Hearths, Stoves, Wainscoting, etc.

Designs and Estimates furnished upon application.

CONSERVATORIES,

GREEN-HOUSES,

GRAPERIES,

SKYLIGHTS,

Erected and Glazed on Rendle's Patent "Acme" System.

Gold and Silver medals have been awarded to the two Model Conservatories, each 16 x 20 feet, exhibited at the World's Exposition, New Orleans.

Estimates, Plans, Illustrated Catalogue, on application to

ARTHUR E. RENDLE,

RENDLE'S HORTICULTURAL AND SKYLIGHT WORKS,

92 BROADWAY, COR. WALL ST., NEW YORK.

The Horticultural Hall, New Orleans, was erected and glazed by me.

AMERICAN ENCAUSTIC TILE.

Acknowledged by experts to be

THE BEST IN THE WORLD.

Manufactured by the

AMERICAN ENCAUSTIC TILING CO. (Limited.)

OFFICE & SALESROOM, 116 WEST 23D ST., N. Y.

Designs and Estimates for Public Buildings, Halls, Churches, Vestibules, and for External Decoration, Bath-room, Stove, and Furniture Decorations.

GLAZED AND ENAMELLED TILES

FOR MANTELS, HEARTHS, WAINSCOTING, ETC.

MINTON'S TILES.

PLAIN AND ENCAUSTIC,

FOR PUBLIC BUILDINGS AND DWELLINGS,

As laid by us in

THE CAPITOLS AT WASHINGTON & ALBANY,

And in numerous Churches, Banks, and Dwellings, in every part of the country.

Glazed and Enamelled Tiles for Mantels, Hearths, Wainscoting, etc., and for Exterior Decoration.

MILLER & COATES,

279 PEARL STREET, NEW YORK.

FLYNT

BUILDING AND CONSTRUCTION CO.,

GENERAL OFFICE, PALMER, MASS.

Contracts made for furnishing all material and labor necessary to build complete

MILLS, HOTELS, CHURCHES,

BUSINESS BLOCKS and RESIDENCES.

Also, for the construction of

RAILROADS, DAMS, AND BRIDGES.

We make Mill-Work a Specialty.

Can show some of the best Mill-Work in New England. Can give the best of references, and should be pleased to correspond with parties in any locality.

MANHATTAN BRASS CO.,

28th ST. AND FIRST AVENUE, NEW YORK.

HOUSEHOLD ART GOODS

IN METAL.

FIRE GOODS AND BRASS TRIMMINGS OF ALL KINDS.

Catalogues furnished on application.

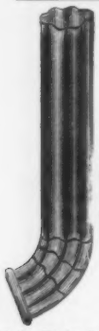
ROBERT C. FISHER,

Successor to FISHER & BIRD,

MARBLE AND GRANITE WORKS.

97, 99, 101 and 103 EAST HOUSTON STREET.

Established 1830. NEW YORK.



POPULAR BECAUSE RELIABLE.

AUSTIN'S PATENT

Expanding Conductor,

OR LEADER.

The ORIGINAL and only LEGITIMATE EXPANDING CONDUCTOR in the market, has been used for years and THOROUGHLY TESTED in all the PRINCIPAL CITIES and TOWNS in the UNITED STATES and is SPECIFIED by ARCHITECTS generally THROUGHOUT THE COUNTRY.

Austin, Obdyke & Co., Philadelphia,

SOLE MANUFACTURERS.

PRINCIPAL AGENTS.

S. D. Hicks & Son,	Boston.	B. G. Carpenter & Co.,	Wilkesbarre, Penn.
M. Halliday,	New York City.	The Miller Iron Co.,	Providence, R. I.
Bruce & Cook,	" "	Theodore Macknet & Co.,	Newark, N. J.
Sidney Shepard & Co.,	Buffalo, N. Y.	Knisely & Miller,	Chicago.
Wasson & Co.,	Albany, N. Y.	J. C. McFarland,	Chicago, Ill.
Hoy & Co.,	Albany, N. Y.	Wm. Fuller & Co.,	Baltimore, Md.
Reardon & Ennis,	Troy, N. Y.	The Blodgett & Clapp Co.,	Hartford, Conn.
Troy Stamping Works,	Troy, N. Y.	Bakewell & Mullins,	Salem, Ohio.
Chas. Millar & Son,	Utica, N. Y.	Biersack & Neidermeyer,	Milwaukee, Wis.
W. H. Scott,	Portland, Me.	Jas. B. Scott & Co.,	Pittsburgh, Pa.
J. W. Jordan,	Worcester, Mass.	C. S. Mersick & Co.,	New Haven, Conn.
Lewis Dauth,	Reading, Pa.		

CARD.

By decisions of the U. S. Circuit Courts the *Exclusive Right* to manufacture *Expanding Conductors of any and all designs*, was secured to WILLIAM AUSTIN, and AUSTIN, OBDYKE & Co. are the only parties authorized to manufacture under Austin's Letters Patent, — all others will be considered and treated as

INFRINGERS.

THE ONLY REAL

EXPANDING CONDUCTOR.

— Guaranteed no Infringement. —

THE IRWIN & REBER

PATENT

EXPANDING WATER CONDUCTOR.

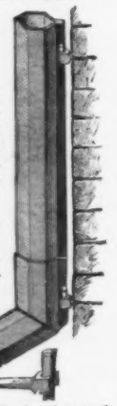
MANUFACTURED BY THE

S. S. S. Conductor Co.

LIMITED,

163 Lacock Street,

ALLEGHENY, PA.



THE STANDING SEAM allows of an easy and secure fastening, keeping the pipe far enough from the wall to make any overflow from the eave pipe or head, run down the spout, and not the wall; and will open, in case of freezing, so as to prevent bursting, and still remain double-locked and water-tight.

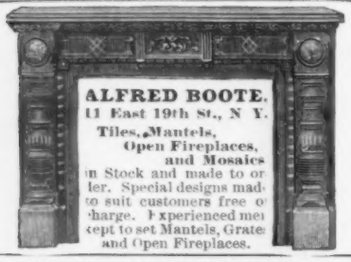
Made in 6-foot lengths, in a single sheet of

SOFT STEEL,

Either Galvanized, Kalameined or Leaded.

PRINCIPAL AGENTS.

E. B. Badger & Son, Boston, Mass.; Noyes & Wines New York; J. S. Thorn, Philadelphia; John G. Hetzell, Baltimore; R. P. Gormully, Chicago; F. Schmitt & Sons, Milwaukee; Shackelton Bros., Cleveland; G. H. Peters & Son, Buffalo, N. Y.; James Ackroyd, Albany, N. Y.; Witt & Brown, Cincinnati; Hull & Cozzens Man'f'g Co., St Louis. A. K. Sweet, Kansas City Mo., and many others.



ALFRED BOOTE.

11 East 19th St., N. Y.

Tiles, Mantels, Open Fireplaces, and Mosaics in Stock and made to order. Special designs made to suit customers free of charge. Experienced men kept to set Mantels, Grates and Open Fireplaces.

MINTON, HOLLINS & CO

STOKE-UPON-TRENT

The original and existing Manufactory of

MINTON'S

Plain, Encaustic, Glazed, Enamelled, Majolica, Printed and Art-Painted Tiles, for Floors, Walls, Hearths, Mantels, Furniture, &c. Illustrated sheets of newest designs just issued.

SHARPLESS & WATTS, Agents,

No. 1325 MARKET STREET, PHILADELPHIA, PA.

A. L. FAUCHERE & CO

Office and Warerooms,

433 AND 435 SEVENTH AVENUE, next to south-east corner Thirty-fourth Street,

Importers, Manufacturers, and Dealers in all kinds of

FOREIGN AND DOMESTIC

MARBLE FOR INTERIOR WORK.

Estimates furnished on application.

BEST CONDUCTOR OF ALL,

Ritchie's Patent Spiral Lock-Seam Pipe

NO SOLDERED JOINTS.

BOSTON SPIRAL TUBE WORKS, LAMB & RITCHIE, Proprietors

See our Advertisement last week.

Stained Glass.

W. J. McPHERSON,

PLAIN, DECORATIVE, DOMESTIC AND ECCLESIASTICAL

Stained & Leaded Glass Manufacturer.

440, 442 & 444 TREMONT STREET.

JAMES BAKER & SONS,

PROFESSIONALS IN

ART STAINED GLASS.

Established, London, Eng., 1834.

WORKS: 20 West 4th Street, New York.

CLEVELAND

Stained Glass Works.

GEO. DRAKE, Proprietor,

99 and 101 Public Square, Cleveland, Ohio.

Decorative Glass Manuf'g Co.,

218 WABASH AVE., CHICAGO.

Stained Glass by newly discovered processes at a fraction of former cost. Not an imitation. Send for Circular.

WILLIAM WRIGHT,

Interior Decorator,

STAINED GLASS.

Designer and Manufacturer of Fine Furniture, Rich Paper Hangings.

34 Fort Street, West. - - DETROIT, MICH.

Friederichs & Staffin,

Plain, Decorative, Domestic, and Ecclesiastical

Stained and Leaded Glass

MANUFACTURERS,

For Churches, Dwellings, etc.,

107 & 109 Gratiot Ave., DETROIT, MICH.

Stained Glass.

SAMUEL WEST,

471 Tremont St., Boston,

Artist in Stained Glass

FOR ALL GRADES OF ORNAMENTATION.

Memorial Windows a specialty.

Awards of the highest merit for thirty years past.

METAL WORK IN BRASS, BRONZE, and STERLING SILVER.

J. & R. LAMB. 6th Ave Cars pass the door.

59 CARMINE STREET, NEW YORK.

Send for Hand-Book, by mail.

New Designs in MOSAIC and JEWELED FIGURE-WORK. STAINED GLASS

McCULLY & MILES,

STAINED GLASS

1-3-5-7 & 9 MADISON STREET

Corner Michigan Avenue,

CHICAGO, - - ILL

ALFRED GODWIN & CO.

STAINED GLASS

For Churches, Dwellings, &c.

Send for Illustrated Catalogue.

1201 Market Street, Philadelphia.

Donald MacDonald, Agt.,

Glass Stainer and Decorator.

Studio and Works, 400 Northampton St.

REDDING, BAIRD & CO.,

Manufacturers of

Stained Glass.

IMPORTED

ROLLED CATHEDRAL GLASS

Office and Show-Room:

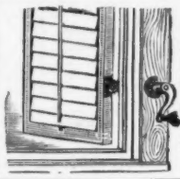
152 Franklin Street, Boston.

J. G. & J. F. LOW,
CHELSEA, MASS.
New York Retail Office, 9 E. 17th St.
REPRESENTED BY

Chicago, Henry Dibblee & Co., 266-268 Wabash Ave.
Albany, Richard Wickham.
Boston, C. A. Wellington & Co., 44 Boylston St.
Buffalo, Malcolm, Wolsley & Co.
Cincinnati, C. S. Rankin & Co., West Pearl St.
Cleveland, A. S. Herenden Furniture Co., Bank St.
Washington, Hayward & Hutchinson, Ninth St.
San Francisco, W. W. Montague & Co., Market St.
Minneapolis, Sullivan & Farnham, Third St., So.
Omaha, Milton Rogers & Sons, Farnam & 14th Sts.
Louisville, J. V. Escott & Sons, Fourth Ave.
St. Louis, Seidel & Schoenle, So. Fifth St.
Milwaukee, Mathews Bros.
Phila., W. H. Harrison & Brother, 1435 Chestnut St.
Pittsburgh, L. H. Smith & Co., 49 Sixth St.
Rochester, Hayden & Havens Co.
Syracuse, Hawley, Whitaker & Co., 83 S. Salina St.

LOW'S ART TILES.

Architects, Builders, and others will confer a favor on the Publishers by mentioning "The American Architect and Building News" when sending for circulars or corresponding with parties advertising in these columns.

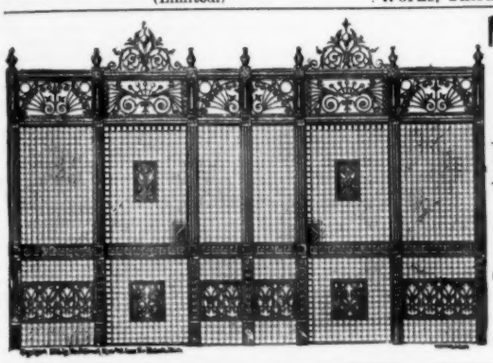


The Little Gem
WINDOW BLIND WORKER.
Opens and closes the blinds without raising the window. Blinds held firm in any position. To those who wish to give our worker a trial we send a sample set for 75 cts. Trade discounts may be obtained by addressing
A. H. DODD, Hudson, N. Y.

H. EDGAR HARTWELL & CO.,
Designers and Art Furnishers,
28 West 23d Street, N. Y. CITY.
1416 F Street, WASHINGTON, D. C.

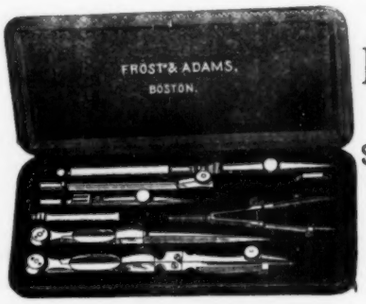
FURNITURE, STAINED GLASS AND FRESCOES.
Houses and Churches Furnished Throughout.

ARTISTIC TILES
FOR WALLS, FIRE-PLACES AND FLOORS
OF PUBLIC BUILDINGS AND PRIVATE RESIDENCES. Manufactured by
The International Tile Co., (Limited.)
New York Office and Show Rooms: 8 East 17th Sreet.
Works, Third St., between Hoyt and Bond St.



National Wire & Iron Co.,
DETROIT, MICH.
Manufacturers of
Iron, Wire and Brass
Elevator Enclosures.
We have recently furnished the new **Board of Trade and Royal Insurance Buildings,** of Chicago, Ill., with Iron and Brass Elevator enclosures, to which we point as a standing reference. Write for estimates and particulars.

FROST & ADAMS,
37 CORNHILL, BOSTON,



Draughting Instruments,
— AND —
SUPPLIES FOR ARCHITECTS, ENGINEERS AND DRAUGHTSMEN.
— AGENTS FOR —
Abbott's Practical Ellipsograph and Levy's Blue-Process Paper.
Copies taken by the Levy Blue Copying Process.
An Examination of our Catalogues is solicited.

HELIOTYPE.
Photo-Mechanical Printing.—For the reproduction in printer's ink, on the printing-press, of Portraits and Views from Nature and all descriptions of PHOTOGRAPHIC work.
Photo-Lithography.—For the reproduction of Artists', Architects', Engineers', Surveyors', and other Drawings from originals in black and white.
Photo-Engraving and Zinc Etching.—For the production of cuts to print with type, from originals in black and white.
Photo-Caustic Printing.—For the lithographic reproduction of photographic subjects, without redrawing.
Lithography. Of all classes.
Chromo-Lithography.
Direct Transfer.—A patented process for the speedy reproduction (from originals made with ordinary ink on ordinary paper) of autograph letters, sketches, caricatures, etc., either as cuts or lithographs.
The Heliotype Printing Company, 211 Tremont Street, Boston, Mass.

Decorators.

FRANK HILL SMITH,
62 BOYLSTON STREET,
BOSTON..... .....MASS.

W. J. McPHERSON,
Established A. D., 1845.
Painter, Glazier, Designer, and Ecclesiastical
DECORATOR.
440, 442 and 444 Tremont Street.

C. H. GEORGE & CO., Importers.
PAPER HANGINGS.
Exclusive Upholstery Goods and Decorations.
152 5th Avenue, New York.

Established A. D. 1848.
L. HABERSTROH & SON,
Mural Decorators,
PAINTING IN ALL ITS BRANCHES.
28 School Street, Rooms 10 & 11, **Boston, Mass.**
20 Bellevue Ave., Near Kay St., **NEWPORT, R. I.**

J. PASQUALI & C. AESCHLIMANN,
Manufacturers of Roman and Venetian
MARBLE MOSAICS,
For Floors, Walls, Ceilings, Mantels, Hearths, Decorations, etc. **231 East 28th St.,** Bet. 2d & 3d Aves. **N. Y.** Prices very moderate. *References:* Principal Architects and decorators of N. Y.

J. K. BRICHAM,
237 Broadway, New York.
SPANISH FLOOR AND WALL TILES.
and American ENCAUSTIC Enamelled Hearths & Facings.
Spanish Mosaics and Glazed Tiles
For Halls, Vestibules, Bath-rooms, Kitchens, etc.

UNMOUNTED
PHOTOGRAPHS
— OF —
Architectural Subjects.
Also, WORKS OF OLD AND MODERN MASTERS IN PAINTING, SCULPTURE, ETC.
Send 6-cent stamp for Catalogue of 5,000 subjects.
SOULE PHOTOGRAPH CO.,
Mention this paper. **338 Washington Street, BOSTON, Mass.**

Wadsworth, Howland & Co.
84 Washington St., Boston, Mass.,
Importers and Dealers in

Mathematical Instruments, Heliographic Blue-Process Papers, and Architects' and Engineers' Supplies
Of Every Description.
Catalogues free upon application.

LIQUID GLASS PAINT.
IT HAS STOOD THE TEST
Of holding Kerosene Oil in Paper Barrels, Boxes, and Bags. It will absolutely hold on Wood or Iron when in salt water, or exposed to salt air, longer than any paint ever made. For Private or Public Buildings it has no equal. Made in White and all Colors. ***Warranted not to crack or rub off. Send for Circular.***
Factory, Lyme, Conn.
Office, 147 Commerce St., Hartford, Conn. } **THE LIQUID GLASS PAINT CO.**

Potter's Mortar Material.

For laying Front Brick, Chimneys and Fireplaces **it has no Equal.**

FURNISHED IN RED, BLACK, OR GRAY. Send for Circulars.

AMERICAN SOAPSTONE FINISH CO., Nashua, N. H.

Annunciators, Electric.

EDWARDS & COMPANY,
(PATENT)
Electric Bells and Annunciators,
AUTOMATIC BURGLAR ALARMS, FIRE ALARMS, Etc.
Estimates for Electric Bells, Annunciators, Speaking-Tubes, Letter-Boxes, Door-Openers for Apartment-Houses, etc.
GAS-LIGHTING BY ELECTRICITY.
Factory: 4th Ave. and 144th St. Office: 171 Broadway, N. Y.

Architectural Iron and Jail Works.

Architectural Iron and Jail Works.
IRON STORE-FRONTS, COLUMNS AND GIRDERS.
Iron Railings and Verandas,
BANK VAULTS, FIRE-PROOF DOORS & SHUTTERS,
JAIL CELLS AND CAGES,
and all kinds of iron-work required in the erection of buildings.
M. CLEMENTS,
Catalogues furnished on application. Cincinnati, Ohio.

Architectural Sheet-Metal Work.

G. L. Swett & Company,
Manuf'rs of Plain and Ornamental
SHEET-METAL WORK FOR BUILDINGS.
Copper Gutters, Cornices, Windows, Finials,
Galvanized-Iron Ventilators, Roofing, etc.
IMPROVED METALLIC SKYLIGHTS.
N. B. — We warrant our Skylights to be Fire and Storm-Proof. They are the best made and are in use by the Heliotype Printing Co., Notman Photographic Co., U. S. Sub-Treasury and Post-Office, and nearly all the principal buildings in Boston.
295 Harrison Ave., cor. Motte St., Boston.

Decorative Glass by Sand Blast.

JOHN MATTHEWS,
First Avenue, Twenty-sixth and Twenty-seventh Streets,
NEW YORK.
Sole licensee in New York of the Tilghman Sand Blast.
Decorative Glass from Late Designs Executed by Sand Blast or Embossing Processes in a Superior Manner.
SHEET AND PLATE GLASS GROUND TO ORDER.
Send for Illustrated Catalogue or Estimates.

Fireplaces, Ash-Traps, and Grates.

EUREKA GRATE WORKS,
Manufacturers of
PATENT FIREPLACE LININGS,
Patent Self-closing Ash-Traps,
Grates of all kinds,
Iron Mantels, and Importers of Tiles.
CINCINNATI, OHIO.

PATENT Solid Parquet FLOORS.

PARQUET FLOORS,
Established 1874. 7-8 and 3-8 in. thick.
These are the cheapest, most beautiful and durable floor made. Thousands of them are in use in the finest residences, offices, etc., throughout the country, with perfect satisfaction. New and beautiful designs are constantly being originated. Send sketch of rooms, with suggestions as to woods, price, etc., for designs and estimates. W. E. WHEELER.
Factory, 84 to 96 Erie Street, Toledo, Ohio.
Office and Salesroom, 12 East 14 St., New York.

Elevators and Hoisting Machinery.

STEPHEN A. MORSE. C. M. WILLIAMS. EDWIN F. MORSE.
Morse, Williams & Co.
Manufacturers and Builders of
Hydraulic, Steam, Belt and Hand-Power Passenger and Freight Elevators, Dumb-Waiters, Automatic Hatch-Doors, etc.
Sole owners of the right to apply the Heebner Patent Governor to Elevators and Hoisting Machinery. *Send for Illustrated Circular.*
Nos. 411 and 413 Cherry Street, Philadelphia, Pa.
Branch Office, 108 Liberty St., New York.

Iron Structures.

BOSTON BRIDGE WORKS,
D. H. ANDREWS, Engineer.
Office, ... 13 Pemberton Square Boston.
WROUGHT IRON TRUSSES,
BOX AND PLATE GIRDERS & BEAMS
For sustaining roofs, floors, walls, and other loads of all kinds, designed and built. Our long experience embraces the designing and construction of many wrought-iron structures, large and small, a conspicuous example of which may be examined in the wrought-iron trusses for roofs and floors of the Exhibition Building of the N. E. Manufacturers' and Mechanics' Institute, Boston.

Portland and Keene's CEMENTS.

J. B. WHITE & BROS., (Limited.)
Manf's of English Portland and Keene's
Superfine and Coarse Cements.
We beg to announce that we have changed our Importer and have appointed MARCIAL & CO., 36 Broadway, N. Y. our sole agents for the Atlantic Seaboard of the U. S., and we ask all buyers of our Cements to address all inquiries to them.
London, February 1st, 1885.
WHITE'S PORTLAND.
Quality and packages the best. Works the largest in the world. Price the lowest for the quality.

Peerless Colors for Mortar.

PEERLESS COLORS FOR MORTAR,
BLACK, BROWN, BUFF, RED.
Brightest and Most Durable Colors Manufactured.
Send for Circular.
SAMUEL H. FRENCH & CO.,
York Avenue and Callowhill Street, Philadelphia, Pa.

BURDITT & WILLIAMS,
20 Dock Square,
BOSTON.

Unequalled Stock of Choice Hardware.
Specifications figured and orders filled in all markets.

Keep Your Walls Dry.
A New Cornice Gutter,
In Wood or Metal, set on furs, with a space behind for over-flow water.

Patented May 12, 1885,
BY
DUDLEY NEWTON,
ARCHITECT,
Bellevue Ave., Newport, R. I.
Permits to use on any building can be obtained on payment of a royalty of $10. for each. Apply to the Patentee.
Infringements Prosecuted.

McSHANE BELL FOUNDRY

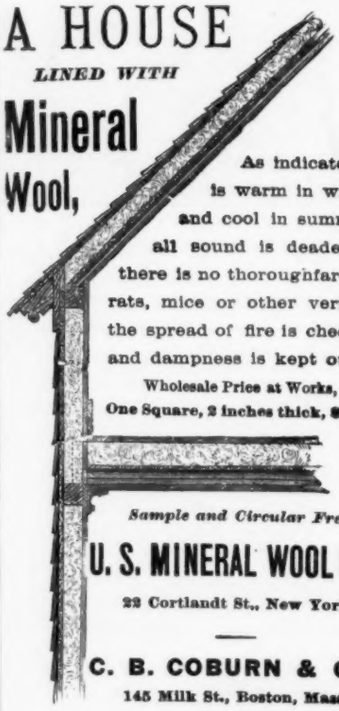
Manufacture those celebrated Bells and Chimes for Churches, Tower Clocks, &c., &c. Prices and Catalogues sent free.
Address
H. McSHANE and CO.,
Baltimore, - - - Md.

SETH THOMAS CLOCK CO.,
THOMASTON, CONN.
20 MURRAY ST., NEW YORK,
TOWER CLOCKS.
SEND FOR CATALOGUE.

"BUILDING SUPERINTENDENCE."

THE BEST AND LATEST TREATISE ON
American Practice in Building,
CLEAR, RELIABLE AND COMPLETE.
Price, $3.00.
TICKNOR & CO., 211 TREMONT STREET, BOSTON, MASS.

A HOUSE
LINED WITH
Mineral Wool,



As indicated, is warm in winter and cool in summer; all sound is deadened; there is no thoroughfare for rats, mice or other vermin; the spread of fire is checked and dampness is kept out.
Wholesale Price at Works,
One Square, 2 inches thick, $4.00.
Sample and Circular Free.
U. S. MINERAL WOOL CO.,
22 Cortlandt St., New York.
C. B. COBURN & CO.,
145 Milk St., Boston, Mass.

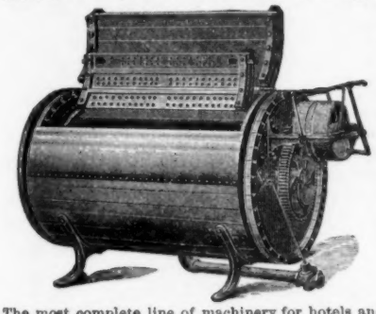
Elevators.

Z. WILE,
PASSENGER AND FREIGHT ELEVATORS,
Hand-Hoists, etc., of the latest improved inventions now manufactured. Invalid Elevators a specialty.
Office, 191 Tremont Street, Boston.

E. BREWER,
Hydraulic, Steam, Belt, and Hand
ELEVATORS, For Freight and Passengers.
267 Federal St., Boston. 149 Broadway, New York.
Send for Circular.

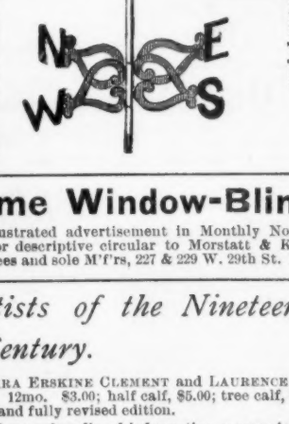
CREOSOTE STAINS.
Patented Apr. 29th 1884
for Shingles, Clapboards & all ex'r woodwork.
Sam'l Cabot Jr.
Sole Manufacturer
70 Kilby St. Boston.
Descriptive Circular by mail on application.

Troy Laundry Machinery Co.,
LIMITED. TROY, N. Y.
Salesrooms: New York and Chicago.



The most complete line of machinery for hotels and Public Institutions. Complete laundries for Institutions our specialty.
Estimates furnished. Send for Illustrated Catalogue

SUPERIOR
COPPER WEATHER VANES,
Church Crosses, Tower Ornaments, Finials, etc.
Gilded with Pure Gold.



THOS. W. JONES, 170-172 Front St.,
Near Malden Lane, NEW YORK.
Successor to Chas. C. Briggs. Successor to V. W. Baldwin.

Vanes made from any drawing or design on short notice. Illustrated Catalogue of over 200 designs mailed to any address. Mention this paper.

Acme Window-Blind.
See Illustrated advertisement in Monthly Nos., or send for descriptive circular to Morstatt & Klatzl. Patentees and sole M'f'rs, 227 & 229 W. 29th St. N. Y.

Artists of the Nineteenth Century.

By CLARA ERSKINE CLEMENT and LAURENCE HUTTON. 12mo. $3.00; half calf, $5.00; tree calf, $7.00, New and fully revised edition.

A full encyclopedia of information concerning the lives and works of modern artists of Europe and America.

"This capital modern dictionary, into which has been condensed a vast amount of information that might be sought for long, and often indeed altogether in vain, elsewhere."—*The Academy (London).*

"It is the most valuable book of its kind in the English language."—*Art Amateur.*

TICKNOR & CO., 211 Tremont St., Boston.

WIRE LATHING,

ESPECIALLY ADAPTED TO
Public Buildings, Private Residences, Mills, Warehouses, Stores, and all Mercantile Structures.

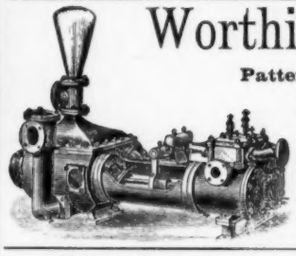
IT IS POSITIVELY FIRE-PROOF.

WIRE LATHING possesses the following qualities:

IT IS NOT COSTLY.
IT IS EASILY AND CHEAPLY APPLIED.
PLASTERING ON THE WIRE LATH WILL NOT CRACK.
THE LATH WILL NOT CORRODE.

The plastering, when applied, **clinches** on both sides of the wire, **forming a double surface.**
THE WIRE LATHING is extensively used by the United States Government in its Custom House, Court House, and Post Office Buildings.
It is indorsed by the leading Insurance Companies, who have applied it to their own fine edifices.
Full information given on application to the

CLINTON WIRE CLOTH CO., Clinton, Mass.
59 Beekman Street, New York. 137 Lake Street, Chicago.



Worthington Steam Pumps.

Patterns specially adapted to
HOUSE TANK SERVICE
And Hydraulic Elevators.
ABSOLUTELY NOISELESS.
HENRY R. WORTHINGTON - New York.
BOSTON, CHICAGO, ST. LOUIS, CINCINNATI, CLEVELAND, SAN FRANCISCO, PITTSBURGH.

SHAFTING, PULLEYS, HANGERS.

F. Brown's Patent Friction-Clutch.

SEND FOR ILLUSTRATED CATALOGUE AND DISCOUNTS TO
A & F. BROWN, 43 Park Place. N. Y.

BUILDING MATERIALS.

Reported for the American Architect and Building News.

BRICK.—₱ M.	New York. (Wholesale Prices.)	Boston. (Prices to Builders and Contractors.)	Chicago.	Philadelphia
Common: *Cargo afloat.*				
Pale	$3 00 @ $3 50	Eastern 7 00 @ 7 50	Building Brick 6 00 @ 7 00	Hard @ 8 00
Jersey	4 50 @ 5 50	Bay State Hard 9 00		Salmon @ 6 00
Long Island	@	Domestic Com. 8 00 @ 9 00	Indiana Pressed 16 00 @ 28 00	Stretchers @ 11 00
Up River	5 00 @ 5 75	Domestic Face 19 00 @ 20 00	St. Louis Fronts @ 27 00	Pressed 20 00 @ 23 00
Haverstraw Bay	5 75 @ 6 00	Philadelphia 40 00 @ 45 00	———	End Headers, all colors @ 65 00
" 1st	6 00 @ 6 50	Phila. mould 50 00 @ 80 00	———	Edge & End all colors @ 85 00
Hollow	@ 13 00		22 00 @ 29 00	
Fronts:			65 00 @ 350 00	
Croton, Brown	12 00 @ 13 00		@ 50 00	
" dark	12 00 @ 14 00	Glens Falls 25 00 @ 26 00	———	
" red	12 00 @ 14 00		@ 45 00	
Chicago pressed			38 00 @	
Chicago Moulded		Glens Falls Mould. 30 00 @ 35 00	25 00 @	
Baltimore	37 00 @ 41 00		60 00 @ 100 00	
Glens Falls — white	30 00 @ 35 00	35 00 @ 40 00	30 @	
Philadelphia	24 00 @ 25 00	45 00 @ 60 00	35 @	
Trenton	24 00 @ 25 00		55 00 @ 65 00	
Milwaukee				
Moulded:				
Clark's Glens Falls — Red	25 00 @ 27 00			
" — White	30 00 @ 35 00			
White " Mold,	45 00 @ 60 00			
Enamelled: *Imp.*				
Enameled (edge.)	85 00 @ 100 00	@	@ 100 00	Dom. @ 85
Enamelled (edge and end)	90 00 @ 115 00	@	@ 120 00	Dom. @ 85
CEMENT, LIME, etc.—(₱ *cask.*)				
Rosendale Cement	90 @ 1 00	@ 1 40	*Not Sold.*	1 50 @ 1 75
Utica, Akron, Buffalo, Louisville, Milwaukee	*Not sold.*	*Not sold.*	1 00 @ 1 25	*Not sold.*
Portland, English (Gibbe)	2 50 @ 3 10	@ 3 00	3 00 @ 3 25	@ 3 50
" " (K. B. & S.)	2 75 @ 3 10		3 25 @ 3 50	@ 3 25
" " (Burham)	2 50 @ 2 80		3 15 @ 3 35	@ 3 00
" " (White's)	2 65 @ 3 00			
" German (Alsen)	2 50 @ 3 00	3 00 @ 3 50	3 15 @ 3 35	@ 25
" " (Fewer)	2 45 @ 2 70	3 15 @ 3 35	3 15 @ 3 35	
" " (Vorwohler)	2 50 @ 3 25		3 00 @ 3 25	
" " (Dyckerhoff)	2 75 @ 3 15	3 00 @ 3 50	3 25 @ 3 50	3 00 @ 3 2
" " (Lagerdofer)	@ 2 70	*Not sold.*	*Not sold.*	*Not sold.*
" " (Hanover)	2 50 @ 3 00		3 15 @ 3 35	2 50 @ 3 00
" French (Lafarge)	3 50 @ 4 50	*Not sold.*	3 75 @ 4 25	4 50 @
" American (Saylor's)	2 15 @ 2 30	2 15 @ 2 50	2 75 @ 3 00	2 50 @ 3 00
Selenitic		1 65	*Not sold.*	
Roman	2 75 @ 3 00	@ 3 20	2 75 @ 3 25	3 50 @ 3 75
Keene's coarse	5 00 @ 6 50	@ 7 50	8 00 @ 9 00	6 50 @ 7 00
" superfine	8 75 @ 11 00	@ 11 50	12 00 @ 13 00	11 50 @ 12 00
Lime:				
Lime of Teil	@ 5 00		*Not sold.*	
Hydraulic Lime	@ 1 45	@ 145		
Chicago Lime in bulk			65 @ 75	White Mash 1 25 @ 150
Wisconsin "			75 @ 85	1 00 @ 1 00
Rockland and Rockport, (Com.)	@ 1 00	@ 1 15	*Not sold.*	
Rockland and Rockport, finish	@ 1 20	@ 1 20	*Not sold.*	
State, com. cargo rates (nom.)	@ 90	*Not sold.*	*Not sold.*	*Not sold.*
State, finishing "	@ 1 10	*Not sold.*	*Not sold.*	*Not sold.*
Plaster of Paris (calcined.)	@ 1 25	1 65 @ 1 90	@ 1 75	2 00 @ 2 25
" (casting)	@ 1 35	@ 2 25	@ 1 75	2 25 @ 2 50
Hair (Cattle) ₱ *bush*	21 @ 25	@ 30	20 @ 25	20 @ 25
" (Goat)	30 @ 35	@ 30	35 @ 40	28 @ 33
Sand, ₱ *load*	1 00 @ 1 25	@ 1 50	100 @ 1 25	@ 1 50
STONE. (₱ *cubic foot, rough.*)				
Granite *(Maine)*		@ 60		75 @ 2 00
Limestone:				
Bedford	@ 1 00	95 @ 1 00	50 @	3 75 @
Joliet	@		35 @ 55	
Lemont	@		35 @ 60	
Serpentine	@		80 @ 90	75 @ 2

(Continued on page vi)

MASSACHUSETTS

INSTITUTE OF TECHNOLOGY.

BOSTON, MASS.

This school offers a four year's scientific and professional training in Civil, Mechanical, Mining and Electrical Engineering, Chemistry, Natural History, etc.

THE COURSE IN ARCHITECTURE

embraces, besides the necessary scientific and mathematical subjects, the study of architectural history, and the constant practice of original design.

Students in Architecture are received into a two year's special course.

Francis A. Walker, Prest. J. P. Munroe, Sec'y

Harvard University,

CAMBRIDGE, MASS.

Lawrence Scientific School.

Four years' courses are given in: I, Civil Engineering; II, Chemistry; III, Natural History (Biology or Geology); IV, Mathematics and Physics. The degrees given are Civil Engineering and Bachelor of Science. Graduates of Colleges can enter with advanced standing of one or two years.

Persons who are not candidates for a degree may enter the School as Special Students, at any time, without examination, and pursue any of the courses of instruction for which they are found competent. Address the Dean of the Lawrence Scientific School.

Cornell University.

DEPARTMENT OF

Architecture, Civil Engineering, Mechanical Engineering

The course in Architecture embraces the necessary scientific and mathematical studies, the history of the art, and constant practice in drawing and designing.

Persons 21 years of age, properly qualified, are received as special students, without the usual entrance examinations. For copies of the Register, giving full information, address the

TREASURER OF CORNELL UNIVERSITY, ITHACA, N. Y.

SCHOOL OF MINES,
Columbia College.

Department of Architecture.

For information, address

GEO. F. FISHER, Registrar,
Or Prof. W. R. WARE, School of Mines,
49th Street and Madison Avenue, New York.

Winckelmann's History of Ancient Art.

Translated from the German by Dr. G. H. Lodge. Two volumes. 8vo. $9.00.

A new and cheaper edition of this unique classic with 75 fine copper-plate engravings. Winckelmann has been translated into five languages, as the most important work on ancient æsthetics, and the copious annotations of various German, Italian, and English critics are attached to the new Boston edition. The fine arts of ancient Greece and Italy are described with luminous precision, and with a multitude of details of fascinating interest.

"Winckelmann's style resembles an ancient work of art. Each thought steps forth, fashioned in all its parts, and stands there, noble, simple, lofty, complete: IT IS."—*Herder.*

Ticknor & Co., 211 Tremont Street,

BOSTON.

STEAM HEATING.

Page's New "All Right" Steam Heater

Is the cheapest and most economical boiler ever produced. Everything about it perfect.

Send for Circular.

THE COMBINATION CO.,

Wm. H. Page, Treas. **NORWICH, CONN.**

J. REYNOLDS & SON,

FURNACE MANUFACTURERS.

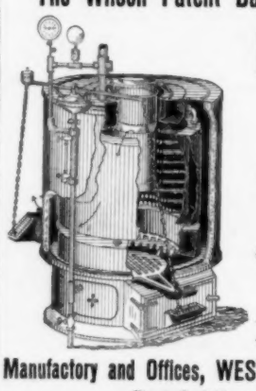
Kitcheners, Grates, etc.

Send for Catalogue.

13th and Filbert Streets, Philadelphia, Pa.

HOUSE WARMING.

The Wilson Patent Base-Burning



Portable Boiler.

Improved 1885.

OVER 300 In Use.

Manufactory and Offices, WESTFIELD, N. Y.

Branch Office:

24 Erie Street, Buffalo, N. Y.

BUILDING MATERIALS.

	New York. (Wholesale Prices.)	Boston. (Prices to Builders and Contractors.)	Chicago.	Philadelphia
Foundation:				
Dimension	@	5 00 ℔ ton	20 @ 28	30 @ 5 00
Block	@	4 60 ℔ perch	8 50 ℔ cord.	50 @ 6 00
Rubble	@	1 25 @ 1 50	8 50 @	
Bluestone: (℔ *sq. ft.*)				
Sidewalk	30 @ 5 00	40 @ 1 75	75 @ 1 00	70 @ 90
Planed	50 @ 6 00	75	50 @ 1 00	1 10 @ 1 25
Sandstone,				
Longmeadow		75 @ 85		
Kibbe		85 @ 95		
Brown (Connecticut)	1 00 @	1 25 @ 1 45	1 50 ℔ cub.ft.	1 35 @ 2 00
Amherst }	90 @ 95	90 @ 1 00	55 @ 65	
Berea } Ohio	75 @ 1 00	80 @ 90	45 @ 55	90 @ 1 10
Berlin }	75 @ 1 00	80 @ 90	55 @ 65	
Belleville	80 @ 1 25	1 25 @ 1 35	"	
New Brunswick and Nova Scotia	@ 1 00	75 @ 1 00	"	
Caen	@	@ 2 00	"	
Marble (℔ *cu. ft.*)				
Lee, Mass.	@	1 75 @ 2 50	*Not sold.*	2 00 @ 2 50
Rutland, white	@	@ 3 00	3 50 @ 6 00	2 25 @ 2 50
Sutherland Falls	1 25 @ 1 75	@ 2 00	3 50 @ 6 00	2 50 @ 4 00
Glens Falls, black	@	2 00 @ 3 00	*Not sold.*	4 00 @ 4 50
Italian, blue-veined	@	50 @ 60	@ 4 40	— @ —
" Sienna	@	3 00 @ 3 50	*Not sold.*	3 25 @ 6 50
Tennessee, red	@	1 25 @ 2 50	@ 4 00	2 00 @ 3 00
" Knoxville	@	85 @ 90	@ 4 00	@ 1 50
Pennsylvania, blue	@		*Not sold.*	2 23 @ 2 50
Vermont, white	@	1 50 @ 2 00	3 50 @ 6 00	
Slate: Roofing (℔ *square*)	7 00 @ 8 00	4 50 @ 7 00	6 25 @ 8 10	6 25 @ 7 00
" " green		@ 5 75		
" " unfading	7 00 @ 8 50	5 50 @ 6 50	@ 8 60	@ 7 00
" purple	@ 15 00	13 00 @ 14 00	— @ 16 00	@ 12 00
" red	— @ —	Brownville, Me.	7 20 @ 7 60	@ 4 00
" black, Lehigh	— @ —	6 50 @ 9 00	7 30 @ 8 00	@ 4 50
" " Chapmans	5 50 @ 8 00	5 50 @ 8 00	6 00 @ 8 50	5 50 @ 8 00
" Unfading Black, Monson, Me.	@		*Not sold.*	@ 15 00
Tiles, Am. ℔ M.	@			@ 3 85
N. Peach Bottom, warranted unfading				
LUMBER. — ℔ M.				
Boards: (*Ordinary dimensions.*)				
Pine, 1st quality, clear	65 00 @ 75 00	50 00 @ 60 00	44 00 @ 47 00	65 00 @ 75 00
" 2d quality	55 00 @ 60 00	42 00 @ 48 00	41 00 @ 44 00	55 00 @ 60 50
" 3d quality	18 00 @ 22 00	35 00 @ 40 00	37 00 @ 43 00	18 00 @ 22 00
Spruce	@ 25 00	11 00 @ 14 00	*Not sold.*	@ 22 50
Hemlock	ea. 17 @ 18	11 00 @ 12 50	@ 10 00	12 50 @ 15 00
Yellow pine	20 @ 40	30 00 @ 38 00	@ 28 00	17 00 @ 20 00
Cypress	@	32 00 @ 40 00	@	40 00 @ 55 00
Clapboards:				
Pine	@	33 00 @ 55 00	10 00 @ 21 50	@
Spruce	@	23 00 @ 35 00	*Not sold.*	@
Framing Timber:				
Pine			11 00 @ 16 00	25 00 @ 35 00
Spruce	13 50 @ 16 00	13 50 @ 15 00	*Not sold.*	18 50 @ 20 00
Hemlock	12 00 @ 15 00	@	10 50 @ 15 50	12 00 @ 13 00
Yellow pine	18 00 @ 25 00	23 00 @ 26 00		25 00 @ 30 00
Laths:				
Pine	@	2 25 @ 2 35	1 75 @	— @ —
Spruce	2 20 @ 2 25	2 00 @ 2 25	*Not sold.*	2 35 @ 2 40
Shingles:				
Pine, shaved ℔ M.	5 00 @ 6 00	@	*Not sold.*	
Pine, sawed "	4 00 @ 5 60	@ 4 50	2 25 @ 2 45	
Spruce, sawed "	1 50 @ 2 00	@ 1 50	*Not sold.*	
Redwood ℔ 125.	1 40 @ 1 60	3 75 @ 4 50	5 50 @ 8 00	30" $10 @ 28
Cedar, split ℔ M.	@	@	*Not sold.*	24" 8 @ 21
Cedar, sawed "	@	2 00 @ 4 00	2 00 @ 2 25	20" 5 50 @ 14
Cypress. Split....7 x 24. "	18 00 @ 20 00	5 50 @ 6 00	4 00 @ 4 50	13 00 @ 20 00
Miscellaneous:				
Piles ℔ ft.	4½ @ 5½	Piles 6c. ℔ ft.	*Not sold.*	
Fence pickets, Spruce	8 00 @ 10 00	10 00 @ 18 00	Pine, 8 @ 21 00	12 00 @ 14 00
Cedar posts, 9 ft. (sq. posts.)	@	25 @ 35	9 00 @ 21 00	70 @ 1 25
Chestnut "	@	25 @ 35	*Not sold.*	28 @ 36
Finishing Woods: ℔ M. (*First Quat. Kiln-dried.*)				
Ash [	@ 55 00	38 00 @ 48 00	35 00 @ 40 00	45 00 @ 50 00
Cherry	80 00 @ 120 00	60 00 @ 90 00	80 00 @ 100 00	65 00 @ 90 00
Chestnut	@ 55 00	38 00 @ 50 00	45 00 @ 50 00	60 00 @ 80 00
Butternut	40 00 @ 60 00	60 00 @ 70 00	50 00 @ 60 00	70 00 @ 85 00
Mahogany, Baywood [Mexican]	@ 180 00	150 00 @ 160 00	150 00 @ 180 00	120 00 @ 150
" St. Domingo	@ 350 00	120 00 @ 350 00	250 00 @ 300 00	
Maple	45 00 @ 50 00	45 00 @ 65 00	30 00 @ 35 00	30 00 @ 50 00
Oak, red	@ 70 00	@ 50 00	35 00 @ 40 00	35 00 @ 45 00
" white	@ 70 00	@ 55 00	35 00 @ 40 00	55 00 @ 65 00
" quartered	@ 90 00	65 00 @ 70 00	45 00 @ 50 00	70 00 @ 80 00
Sycamore quartered		50 00 @ 65 00	40 00 @ 50 00	70
Pine, clear	65 00 @ 70 00	30 00 @ 65 00	45 00 @ 50 00	85 00 @ 90 00
Redwood	60 00 @ 70 00	60 00 @ 70 00	56 00 @ 65 00	100 00 @
Rosewood ℔ lb	@ 6		@ 7	
Walnut, black	125 00 @ 150 00	85 00 @ 120 00	80 00 @ 100 00	160 00 @ 200 00
Whitewood	45 00 @ 50 00	38 00 @ 45 00	30 00 @ 35 00	20 00 @ 30 00
Yellow pine ℔ M.	@ 45 00	40 00 @ 45 00	30 00 @ 35 00	30 00 @ 35 00
Gumwood, best red			30 00 @ 35 00	
PAINTS. (*In oil,* ℔ *lb.*)				
White lead, Am.	6½ @ 6¾	@ 6½	@ 6¼	5 @ 6½
" Zinc, "	5 @ 8½	@ 8	7 @ 10	4 @ 6
Red lead, Am.,	6 @ 6½	6 @ 6½	@ 6½	8 @ 12
" Venetian	6 @ 10½	7 @ 12	1¾ @ 2¼	4 @ 6
" Vermilion	65 @ 70	55 @ 60 dry	55 @ 60	Am. 14 @ 22
Red Indian, Eng.	12 @ 20	12 @ 20	12 @ 20	12 @ 16
Yellow Ochre	6 @ 15	7 @ 12	3 @ 15	7 @ 9
" Chrome	12 @ 20	18 @ 25	15 @ 25	12 @ 22
Green (chrome)	8 @ 13	8 @ 20	10 @ 20	9 @ 15
Green, Paris,	25 @ 40	25 @ 40	18 @ 35	12 @ 28
Black, lamp,	15 @ 25	15 @ 25	8 @ 30	10 @ 18
Blue, ultramarine	12 @ 18	18 @ 30	12 @ 35	15 @ 30
Oil, linseed, (raw) (℔ *gals*)	44 @ 46	47 @ 52	42 @ 43	45 @ 46
" " boiled	47 @ 49	50 @ 55	45 @ 46	48 @ 49
Turpentine	34½ @ 36	39 @ 46	36 @ 38	37 @ 39
Varnish, coach	@	1 50 @ 6 00	1 25 @ 2 00	1 75 @ 5 25
Shellac	@	2 50 @ 3 00	3 25 @ 4 00	1 60 @ 3 00
Putty	2 @ 3	2 @ 4	02 @ 03	1¾ @ 2½
Whiting (*dry*)	50 @ 65	1 @ 1½	1 @ 2	½ @ ¾
Paris white, (Eng.,)	2 @ 3	2 @ 3	2 @ 2½	1½ @ 1½
Litharge, Am	5½ @ 5¾	6½ @ 7	6½ @ 10	1½ @ 1¾
Sienna (burnt)	12 @ 17½	14 @ 20	4 @ 16	6½ @ 6½
" umber, "	11 @ 16½	14 @ 20	@ 10	9 @ 14

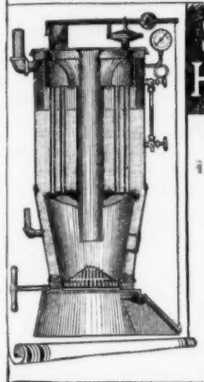
The GOODWIN GAS STOVE & METER CO.,
MANUFACTURERS OF
The Sun Dial Gas Cooking and Heating Stoves

The most economical in use. Over 50 different kinds. Suitable for Families, Hotels, Restaurants and Public Institutions. Laundry, Hatters' and Tailors' Heaters. Hot-Plates, Warming-Closets for Pantries. Hot-Water Generators, etc., etc.

1012-1016 Filbert Street
Philadelphia.

142 Chambers Street, New York.
126 Dearborn Street, Chicago.
Waldo Bros., Agts., 88 Water St., Boston, Mass.

Unparalleled Success
THE NEW
AMERICAN Automatic
STEAM HEATER



FOR DWELLINGS, PUBLIC BUILDINGS, RAILWAY STATIONS, OFFICES, ETC.
LOW PRESSURE, SELF REGULATING, ECONOMICAL, CHEAP, DURABLE.
UNIFORM HEAT, NO GAS, DUST OR SMOKE. NO OBJECTIONS.

MANUFACTURED BY
NEWELL UNIVERSAL MILL CO
10 BARCLAY ST. NEW YORK
SEND FOR ILLUSTRATED CATALOGUE.

PEET VALVE CO.,
Manufacturers of

DOUBLE GATE-VALVES
—FOR—
STEAM,
WATER,
GAS, Etc.
163 Albany St., Boston.

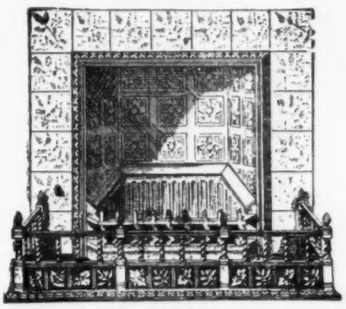
SHIELDS & BROWN,
78 & 80 Lake Street, - Chicago, Ill.
MANUFACTURERS AND SOLE PROPRIETORS OF
BRADLEY'S

FOR BOILERS AND STEAM PIPES.
Reduces Condensation of Steam.
FOR GAS AND WATER PIPES.
Prevents Sweating and Freezing.
The best Non-Conductor of Heat and Cold in the World.
Send for illustrated descriptive Circular, and name this paper.
NEW YORK OFFICE: 132 Cedar Street.
ST. LOUIS OFFICE: 114 North 7th Street.

SLATE MANTELS
Of the latest and most beautiful designs, and all other Slate and Soapstone work on hand or made to order, JOSEPH S. MILLER & BROTHER, 1210 Ridge Avenue, Philadelphia, Pa. Successor to Wilson & Miller. Send for Illustrated Price-List.

WARM-AIR
REGISTERS.
THE TUTTLE & BAILEY M'F'G CO., 83 Beekman St., New York. 64 Union St., Boston.

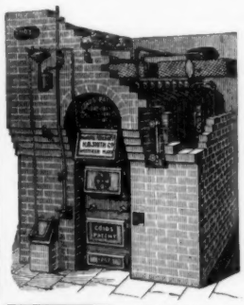
PHILADELPHIA GRATE WORKS.
THOMAS S. DIXON & SONS,
MANUFACTURERS OF
FINE **GRATES**
Furnaces, Ranges.



OPEN **Fire-Places**
Gas-Log Fires.

IMPORTERS OF ENGLISH AND FRENCH FIRE-PLACE FITTINGS
1330 Chestnut Street, - - Philadelphia.

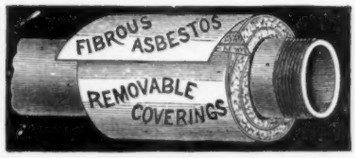
JOHN DAVIS & CO., Contractors for
STEAM HEATING & VENTILATING
For Stores, Hospitals, Factories and all Public Buildings. Estimates and specifications furnished for direct and indirect heat. Boilers of superior quality and design; also Steam Pumps, Iron Pipe and Fittings. Call or address
71 to 75 Michigan Street, CHICAGO.



Foundry, Westfield, Mass.

THE H. B. SMITH CO.,
MANUFACTURERS OF
The Union Steam and Water
HEATING APPARATUS,
For Public Buildings and Private Residences.
Also Manufacturers of
Reed's Improved Cast-Iron Radiators,
Mill's Safety Sectional Boilers,
Gold's Indirect Pin Radiators, etc.
Office and Warerooms, 137 Centre St., New York.

STEAM WARMING.
BATES & JOHNSON,
114 LEONARD STREET, - - - - - NEW YORK.
59 West Water Street, Syracuse. 310 Broadway, Albany.
House Warming a Specialty. Estimates Furnished on Application.



PIPE-COVERING.
This covering is made entirely of Asbestos, and can not be affected injuriously by heat or dampness, nor can it be made a harbor for vermin.
Asbestos Building-Felt, Fire-Proof Cements, &c.
THE CHALMERS-SPENCE CO.,
419-421 E. 8th Street - - NEW YORK.

STEAM-FITTING DIVISION
—OF THE—
NEW YORK STEAM COMPANY,
66-68 CORTLANDT STREET, NEW YORK.
Contractors for Steam-fitting of every description. Work executed from the designs of Architects and Engineers. Plans and Specifications furnished. Correspondence solicited.
General Offices,
22 CORTLANDT ST., N. Y.
Superintendent, H. M. SMITH,
Heating and Ventilating Engineer.

GORTON'S HOUSE HEATING STEAM-GENERATOR.
Self-Feeding, Base-Burning, Wrought-Iron. First-class in its construction, perfectly safe in use, generates steam quickly and rapidly; is compact, taking small floor-space, requiring no brick-work in setting; economical in the use of fuel, and costing much less than any other wrought-iron boiler of like capacity now in use. Write to us for Catalogue and Price-List. See cut in Monthly Nos.
GORTON BOILER MANUFACTURING CO., 110 Centre St., New York.

BIBB'S
Celebrated Original
BALTIMORE FIRE-PLACE HEATERS,
To warm upper and lower rooms. The handsomest, most economical Coal Stoves in the World.
B. C. BIBB & SON,
Foundry, Office and Salesroom,
39 AND 41 LIGHT STREET,
Baltimore, Md.
MARBLEIZED SLATE MANTELS.
Send for Circulars.

Established 1827.
W. JACKSON, & SON,
Manufacturers and Importers of
Grates, Open Fireplaces,
Fenders, Fire Irons, etc.
1166 Broadway,
Bet. 27th & 28th Sts.
246 Front Street,
Near Peck Slip,
New York.

GLOBE VENTILATORS & CHIMNEY CAPS.

Public and Private Buildings and Railroad Cars Perfectly Ventilated.

SMOKY CHIMNEYS CURED!

STATIONARY, ORNAMENTAL, NOISELESS, STORM-PROOF, DURABLE, SIMPLE, and CHEAP.

Send for Price-List. Working Model sent on receipt of 20 cents, to pay postage. Manufactured and for sale by

GLOBE VENTILATOR CO.

Office: 203 River Street, Troy, N. Y.

Wholesale Agents for Albany and vicinity, Hoy & Co., Nos. 25 and 27 Green St., Albany, N.Y
Wholesale Agents for New York City and vicinity, George H. Morman, 28 Cliff St., New York City.
Wholesale Agents for Philadelphia, Pa., and vicinity, Merchant & Co., 325 Arch St., Phila.
Wholesale Agents for Nebraska, Idaho, Montana, and Wyoming, Milton Rogers & Son, Omaha, Neb.
Wholesale Agents for Milwaukee & Vicinity, Rundle, Spence & Co., 93 West Water St., Milwaukee, Wis.
Wholesale Agents for Boston, Mass., and vicinity, Chas. M. Bromwich, 613 Broadway, South Boston.
Wholesale Agents for Chicago, Ill., Sargent, Greenleaf & Brooks, 45 and 47 Franklin St.
Wholesale Agents for Louisville, Ky., George L. Smith, 167 First St., Louisville, Ky.
Wholesale Agents for Canada, Hughes & Stephenson, 745 Craig St., Montreal, Can.
Wholesale Agents for St. Louis and vicinity, N. O. Nelson & Co., Eighth and St. Charles Sts.
Wholesale Agents for Ogden, Utah, and vicinity, D. D. Jones, Main St., Ogden, Utah.
Wholesale Agents for Rochester and vicinity, E. H. Cook & Co., (Limited) 31 Mill St., Rochester, N. Y.
Wholesale Agents for Minnesota, Wilson & Rogers, 24 East Third St., St. Paul, Minn. Wholesale Agents for Cincinnati and vicinity, H. McCollum & Co., 202 Race St., Cincinnati, O.
Wholesale Agents for Baltimore, Md., Lyon, Conklin & Co., 27 and 29 Light Street, Baltimore, Md.
Wholesale Agents for Detroit, Mich., and vicinity, Dry-Dock Sheet-Metal Works, cor. Orleans and Franklin Sts., Detroit, Mich.

Clover-Leaf Ventilators

AND CHIMNEY CAPS,

For Public & Private Buildings, etc.

Specially adapted for Sanitary Plumbing.

SURE CURE FOR SMOKY CHIMNEYS.

Cheapest and most effective Ventilator on the market. Working models mailed on receipt of 20 cents. Absolutely storm-proof. A down current creates an up draft.

MANUFACTURED AND FOR SALE BY

E. VAN NOORDEN & CO.,

389 Harrison Ave., Boston, Mass.

AGENCIES:

Stambach & Love, Philadelphia; Peck Bros. & Co., New York; Reuter & Mallory, Baltimore, Md.; Pierce, Butler & Pierce, Syracuse, N. Y.; A. Mollo, New Orleans, La.; M. M. Murphy & Co., Cleveland, Ohio; Jas. B. Scott & Co., Pittsburgh, Pa., Detroit Lead Pipe and Sheet-Lead Works, Detroit, Mich.

ST. LOUIS

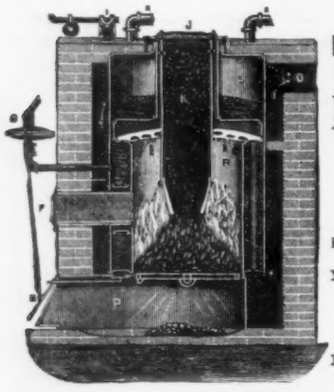
Steam Heating and Ventilating Co.,

CONTRACTORS FOR

HEATING BY STEAM

Stores, Residences, Churches, and all Public Buildings. Plans, Specifications and Estimates furnished.

No. 621 OLIVE STREET, ST. LOUIS, MO.



THE DUNNING

Patent Wrought-Iron Boiler,

With Self-Feeding Coal-Magazine, is the Best for

Low-Pressure Steam-Heating,

And insures a warm house day and night.

Over 2500 in Use!

Keeps steam up constantly. Manufactured at the **New York Central Iron Works, Geneva, N. Y.**

New York Office: **40 Courtlandt Street.**
Philadelphia office: **1343 Arch Street.**

Send for Illustrated Catalogue with full description and price-list.

AGENTS WANTED.

N. B. — Correspondence solicited from Architects and persons building. *Mention the "American Architect."*

THE FLORIDA

House - Heating Boiler.

(Catchpole's Improved.)

The cheapest and most economical Low-pressure Steam Boiler in use. Illustrated Catalogue free.

The FLORIDA BOILER WORKS, Geneva, N. Y.

W. H. HARRISON & BRO.,
Manufacturers.
PLAIN AND ARTISTIC

GRATES AND FIREPLACES

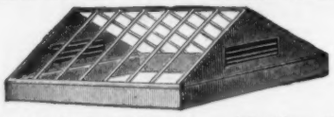
A SPECIALTY.

Also, **Furnaces and Ranges.**

Send for Illustrated Catalogue. 1435 Chestnut St., Philadelphia

Skylights.

METAL SKYLIGHTS.



Warranted absolutely Storm, Weather, Fire and Condensation Proof, Free from Leakage from any source.

Skylights and Glass furnished and put up by us in any part of the country.

Ventilators and Chimney Caps or Smokey Chimneys.

CORRUGATED IRON ROOFING AND SIDING.

GARRY PATENT IRON ROOFING AND IRON SHINGLES.

Galvanized Iron Cornices, Window Caps, Copper Gutters and Conductors.

E. VAN NOORDEN & CO.,

389 HARRISON AVE., - - BOSTON.

BICKELHOUPT'S

METALLIC SKYLIGHTS.

NO INFRINGEMENT on any other.

Are the Cheapest and Best.

Manufactured by

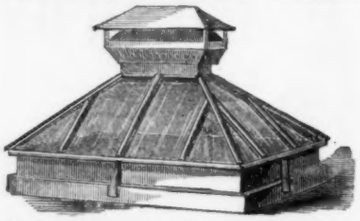
BICKELHOUPT BROTHERS,

218 West 37th Street, New York.

Send for Illustrated Catalogue.

THE BROOKLYN

METALLIC SKYLIGHT WORKS.



JOHN SETON, **78 and 80 Washington Ave. BROOKLYN, N. Y.**

☞ Sendfor new illustrated catalogue and price-lis.

THE HAYES SKYLIGHTS

VENTILATORS ETC.

ESTB 1868 71-8-AVE-N.Y.

MY 100-PAGE ILLUSTRATED

CATALOGUE of BOOKS

On Architecture, Building, Carpentry, Drawing, Painting, Decoration, and Ornament,

Drawing Instruments, Builders' Level and Architects Materials,

Sent on receipt of three two-cent stamps.

Wm. T. Comstock. Astor Place, New York.

The Temporary Binder

Provided by us will keep your copies of the *American Architect* in PERFECTLY uninjured condition.

Price $1.25, post paid.

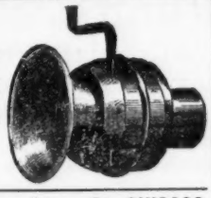
Furniture and Interior Work.

Ostrander's New Oral Annunciator.

Superior in every respect. No Batteries or Wires.

Hotels, Apartment-Houses, Residences, Offices, Factories, etc. fitted in any part of the Country. Complete Outfits of Speaking-Tubes, Whistles, Pneumatic-Bells, etc., furnished. Send for New Catalogue. Estimates furnished.

W. R. OSTRANDER & CO.,
21 and 23 Ann St., New York.



THE BUTLER CO., 156 & 157 Michigan Ave., corner Adams St., CHICAGO

MANTELS IN { Wood, Marbleized Slate and Iron, Terra-Cotta and Tiles.

Sole Chicago Agents for J. S. CONOVER & CO., of New York City, Designers and Makers of Finest Brass FirePlaces and Fire Goods.

METALLIC FRAME
WIRE WINDOW-SCREENS

Send for circular and references.

Over 15,000 in Use.

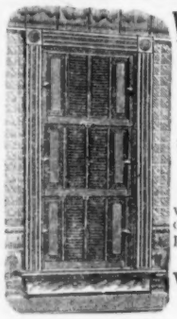
AMERICAN SCREEN CO.,
Brookline, Mass.

SETTEES AND OPERA CHAIRS.

The Newest & Best Styles for SUNDAY SCHOOLS, CHURCHES, OPERA-HOUSES, LODGEROOMS, HALLS, OFFICES, &c.

Harwood Man'f'g. Co.,
91 Summer St., Boston.

Send for catalogue and state requirements.



Willer's Patent Sliding Blinds.

BEST INSIDE WINDOW BLIND in the Market.

Made in Pine or Hardwood, highly finished and comprising the latest improvements.

Send for Catalogue.

WILLIAM WILLER,
SOLE MANUFACTURER,
MILWAUKEE, WIS.

Agents wanted everywhere.

Moorish Fret-Work,

— OR —

INTERLACED WOOD-WORK.

Unequalled for Interior Decorations, Spiral Mouldings, and Balusters.

C. S. RANSOM & CO.,
Cleveland, Ohio.

IMPROVED SEATING,

For Schools, Churches, *Halls &* OPERA HOUSES.

Send for Catalogue showing 20 Best Styles manufactured by

A. H. Andrews & Co.,
Successors to
BAKER, PRATT & CO.

815 Arch St., Phila. | 195 Wabash Av., Chicago. 19 Bond St., N. Y. 27 Franklin Street, Boston.

ROYAL GAS MACHINE.

Hotels. Churches. Factories. Colleges. Asylums Private Residences all use it.

Street Lamps All Designs. Posts. Gasoline. Naphtha. Crude Oil, for Gas Works

No Smoke!! No Smell!!!

ADDRESS
PENNA GLOBE GAS LIGHT Co.
47 & 49 No. 2d St., Phila. Pa.

"OTTO" GAS ENGINE,

Guaranteed to consume 25 to 75 per cent less gas than any other Gas Engine per brake-horsepower.

Over 15,000 IN USE.

TWIN ENGINES

Impulse every Revolution.

The steadiest Gas Engine yet made.

ENGINES and PUMPS COMBINED

For Hydraulic Elevators, Town Water Supply or Rail way service. Special Engines for Electric-Light work Unexcelled for running Elevators, Wood-Tools, or any kind of Machinery.

SCHLEICHER, SCHUMM & CO.,
33d and Walnut Sts., Philadelphia. 214 Randolph St., Chicago.

Street Lighting by Contract.

LANTERNS, LAMP-POSTS,

— AND —

EVERYTHING SUPPLIED.

Please call on us before Purchasing.

GLOBE GAS-LIGHT COMPANY,
77 and 79 Union St., Boston.

The Great Church LIGHT.

FRINK'S Patent Reflectors give the Most Powerful, the Softest, Cheapest and the Best Light known for Churches, Stores, Show Windows, Parlors, Banks, Offices, Picture Galleries, Theatres, Depots, etc. New and elegant designs. Send size of room. Get circular and estimate. A liberal discount to churches and the trade. I. P. FRINK, 551 Pearl Street, N. Y.

HUGH MCMILLAN, *Pres.* W. H. MCKINLOCK, *Sec.*
W. A. JACKSON, *Vice-Pres.* F. E. FISHER, *Manager and Treas.*

DETROIT
Electrical Works.

ELECTRIC BELLS.

Burglar-Alarms, Mercurial Fire-Alarms, Watchman's Time-Detectors, Front Door Bells, Cash Calls, Hotel Annunciators, Push-Buttons, Batteries, Insulated Wire,

ELECTRIC GAS-LIGHTING

For Residences and Public Buildings, and a general supply of Electric Apparatus constantly on hand. Send for prices and estimates on work. All work guaranteed.

DETROIT ELECTRICAL WORKS,

Corner Seventh and Woodbridge Sts.,
DETROIT, MICH.

Please mention this paper

WESTERN ELECTRIC CO.,
Chicago, Boston, New York.

Electric Call-Bells and Annunciators,

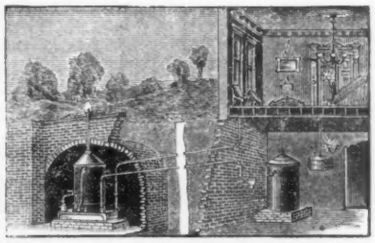
For Hotels, Residences, Offices, etc. Electric Burglar-Alarms, Electro-Mercurial Fire-Alarms. Electric Gas-lighting Apparatus. Telegraph Instruments and Supplies.

IMPERIAL GAS MACHINE.

DENNY BROS. & CO.,
34 Park Place, New York.

In use throughout the world. Send for descriptive pamphlet.

THE only "Dry Blower" Gas-Machine made. No water about it to freeze. Makes gas for 75 cents per 1,000 feet.



Latest invention of the inventor of the Dry Gas-Meter.

PITTSBURGH SUPPLY CO.,
(LIMITED.)
105 WOOD STREET, PITTSBURG, PA.

SEND FOR CATALOGUES.

TIRRILL'S EQUALIZING GAS MACHINE.

Makes Standard, Uniform Gas, wirhout Fire, Danger, Smoke or Smell, using plain Bat-wing Burners.

The only Machine in the world that can reliably do it. Send for circulars, and see who endorses this statement.

TIRRILL GAS MACHINE CO.
39 Dey St., N. Y.

SAMUEL FARQUHAR. **ESTABLISHED 1836.** DAVID W. FARQUHAR.

JOHN FARQUHAR'S SONS.

Slate, Copper, Tin, and Gravel Roofing.

Nos. 20 and 22 EAST STREET, BOSTON.

Order Box at Master Builders Association, 164 Devonshire Street. | Special attention given to Repairs of all kinds.

Inventors and owners of Farquhar's Patent Slate Fasteners, for securing slates to iron roofs, acknowledged to be the strongest method in use, and has been applied to many of the best constructed and largest buildings in this country.

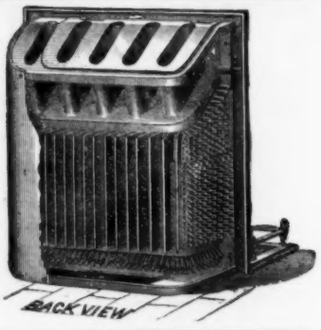
Contracts made for Work wherever desired.

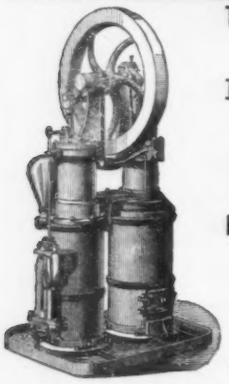
THE
NEUCHATEL ASPHALTE CO.,
Sole Proprietors of the
Val de Travers Rock Asphalte Mines,
Canton de Neuchatel, Switzerland.
Val de Travers Rock Asphalte,
For Floors, Sidewalks, Roofs, &c., Durable, Fireproof, and Impervious.
For estimates and full particulars apply to office, No. 54 Astor House, New York,
HENRY R BRADBURY, Manager.

THE JACKSON
VENTILATING GRATE.

Send for Catalogues and for Reports, from your own State and neighborhood, showing large rooms heated, with out-door temperature at 40° below zero. Dining-room, or parlor, and chambers above, heated by one grate. Rooms perfectly ventilated with out-door air that has passed through the heat-saving chambers.

EDWIN A. JACKSON & BRO.,
77 Beekman Street, NEW YORK.





Improved Rider.

THE BEST PUMPING DEVICE
FOR
DOMESTIC USE,
ABSOLUTELY SAFE.
RIDER'S IMPROVED
HOT AIR PUMPING ENGINE.
Send for Catalogue.
C. H. DELAMATER & CO.
Manufacturers,
16 Cortlandt Street, New York.
40 Dearborn Street, Chicago.

Ericsson's New Hot-Air
PUMPING ENGINE,
For pumping water into tanks for City and Country Residences, Hotels, and general domestic use,
Perfectly safe. Burns Gas, Coal, or Wood.

Ericsson.

C. H. DELAMATER & CO.
Manufacturers,
16 Cortlandt Street, New York.
40 Dearborn Street, Chicago.

Furniture ! !

KEELER & CO.,

81 to 91 Washington Street,

Cor. Elm,

BOSTON.

Wood Mantels and Ordered Work a Specialty.

Estimates given on Architects' Designs.

K. B. & S'. ENGLISH.
GIBBS & CO.'S ENGLISH.
STETTINER GERMAN.
LAGERDORFER GERMAN.
FIEVE A 1 BELGIAN.
ROMAN CEMENTS.
KEENE'S CEMENTS.

Send for Circulars and Price Lists.

HOWARD FLEMING,
23 Liberty St., New York.
IMPORTER OF
PORTLAND CEMENTS
FROM THE BEST MAKERS.

JENKINS BROTHERS' VALVES.
Radiator, Gate, Globe, Angle, Check and Safety.
MANUFACTURED OF BEST STEAM METAL.
The Jenkins Discs used in these Valves are manufactured under our 1880 patent, and will stand 200 pounds steam pressure.
To avoid imposition, see that Valves are stamped "JENKINS BROS."
JENKINS BROTHERS,
71 John St., New York. Send for Price-List "A." **79 Kilby St., Boston.**

Water-Proof.

Air-Tight.

COMPLETE ROOFING.
Deadening Felt, Roofing Materials, Asphaltic Cement for damp walls, foundations, etc.
Send for Samples and Price-List.
WARREN EHRET ROOFING CO.,
Limited.
108 South Second Street, Philadelphia, Pa.

ARCHER & PANCOAST MFG. CO.
GAS-FIXTURES.

BOSTON.	NEW YORK.	CHICAGO.
12 West Street.	67 Greene Street. 68, 70, 72 Wooster Street.	250-252 Wabash Ave.

INSURANCE CO. OF NORTH AMERICA, - - of Philadelphia.

Cash Capital	$3,000,000.00
Reserve for Re-Insurance	2,156,781.63
Reserve for Unadjusted Losses and other Liabilities	473,492.82
Surplus over all Liabilities	3,250,778.61

SOLID BRAIDED COTTON SASH CORD.

Architects wishing to save their clients the annoyance of broken window-cords will please send for Samples to the **Samson Cordage Works.**
J. P. TOLMAN & CO., 164 High St., Boston.

Wilson's Rolling Venetian Blind.

A very DURABLE, HANDSOME and CONVENIENT piece of Window Furniture. It takes the place of the cumbersome folding shutters, saving the studding-out and boxing, and giving extra room. Can be fitted with lower sliding panel so as to close either half of window. Running in grooves, it does not shake or rattle, and is a protection against thieves.

WILSON'S ENGLISH VENETIAN BLINDS,
To pull up with cord. (See cut.)
Wilson's New Patent Double Edged
ROLLING STEEL SHUTTERS,
Fire and Burglar Proof. Will outlast three or four sets of any other make.
"The Hartford" Folding Blind and Wilson's Flexible Car Blinds.
Send for Illustrated Catalogue.
J. G. WILSON, 527 and 529 W. 22d Street, New York.

American Fire Insurance Co., Phila.

CASH CAPITAL	400,000.00
Reserve and Liabilities	852,970.05
Surplus	551,548.96
Total Assets Jan. 1, 1884.	1,804,519.21

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XVIII. Copyright, 1885, JAMES R. OSGOOD & Co., Boston, Mass. No. 508.

SEPTEMBER 19, 1885.

Entered at the Post-Office at Boston as second-class matter.

CONTENTS.

SUMMARY: —

Result of the Colorado Capitol Competition.— Relics of Dwarf Inhabitants of Yucatan. — The Deposition of the Precious Metals.— A New Theory as to the Deposit of Metallic Ores. — The Action of Water in the Building of Stones. — The Architects take Action in the Matter of a Memorial to General Grant. — Award of the Prix de Rome. 133

STROLLS ABOUT MEXICO. — VII. 135

PRAGUE. — II. 136

THE ILLUSTRATIONS: —

Church of the Epiphany, Winchester, Mass. — Cottage at St. Louis, Mo. — The Cathedral of Mexico. — Design for a Gateway to East Rock Park, New Haven, Conn. — Mission Chapel of Trinity Church, Newark, N. J. — Semi-Detached House at Mt. Auburn, Cincinnati, O. 138

SUGGESTIONS AS TO A COMPETITION FOR A MONUMENT TO GENERAL GRANT. 138

DONATELLO. 138

THE PURIFICATION OF WATER BY MEANS OF IRON ON A LARGE SCALE. 139

MASPERO'S EGYPTIAN RESEARCHES. 141

COMMUNICATIONS: —

Pirated Designs. 141

NOTES AND CLIPPINGS. 142

THE competition for the State Capitol of Colorado has resulted in the choice of a design by Mr. E. E. Myers of Detroit, the architect of the Texas State Capitol, now in process of construction, and of the Capitol of Idaho, at Boisé City. The designs placed next in order were by Messrs. F. E. Edbrooke of Denver, and Mr. Herman B. Seeley. Bids are to be invited at once for the execution of Mr. Myers's design, and if the cost is found to exceed one million dollars his plans will be laid aside, and Mr. Edbrooke's will then be put to the same test. Mr. Myers's estimates have, however, been carefully made, and it is not probable that his design will be superseded. His description of the building, as contained in the book of specifications submitted with the plans, is reproduced in full in the Denver *Tribune-Republican*, and although we disapproved the terms of competition, and felt that the architects who accepted those terms were doing an injury to themselves and their profession, we acknowledge without hesitation that the careful study of this document has increased the respect with which Mr. Myers's Texas design had already taught us to regard him. All through the paper we find evidences of correct taste, appreciation of the requirements of such a structure as a State Capitol, and skill in providing for them, which merit high praise; and as we read we are more and more astonished that a man of so much ability should hold his talents so cheap as to lavish them on such ill-paid and thankless work as the construction of the Colorado Capitol upon the terms proposed. We imagine that Mr. Myers, whom we suppose to be an ambitious and comparatively young man, is now too much elated over his victory to care much about the character or consequences of the struggle; but we believe that before many years he will find himself reflecting with regret upon the part which he has taken in it. Not only will he feel, we think, that he has wasted a considerable part of the best period of his life in work which he could not afford to bring to a perfection worthy of his capacity or advantageous to his reputation, but he will also realize, unless we are much mistaken, that he might, if he had chosen to demand it, have obtained the same remuneration, as well as the same opportunities for studying his work, and the consequent reputation and extended connection, which the best architects of other countries enjoy; and that his hesitation in doing so has not only served to deprive him of rewards which may never again be within his reach, but has, by associating his name with those of the ignorant and unscrupulous horde of "cheap architects," inevitably, although unjustly, deprived him of much of that fair fame which, we may assume, he has tried so hard to deserve.

MRS. ALICE LE PLONGEON writes a curious account, published in the *Scientific American*, of some villages of pygmies discovered by her husband and herself on the eastern coast of Yucatan. It is singular that recent ethnological discoveries in various parts of the world have related to dwarf tribes, and Mrs. Le Plongeon, before describing the Lilliputian towns of Yucatan, reminds us that a number of stone tombs were found a few years ago on the banks of what the printed account calls the River Merrimac, containing adult human skeletons only three feet long, and it is probable that the colonization of Central Africa will show the existence of many tribes of little men. In Mexico, particularly in the south, the dwarfs play a large part in the traditions of the natives, who attribute to them the construction of the ruined buildings found there, and sometimes profess to have seen them, or to have been disturbed by the sound of their hammering at night. The place most frequented by the dwarfs seems to have been Cozumel Island, a low, flat reef, about twenty-four miles in length, off the east coast of Yucatan. On this island still exist the ruins of pygmy cities of considerable importance, with temples built of carefully-hewn stone, the largest of which is fourteen feet long and nine feet high, and has a doorway three feet high and eighteen inches wide; and near by are well-constructed triumphal arches nine feet high. On the neighboring coast are still to be seen the remains of villages, all the houses in which are of stone, but so small that no one larger than an ordinary child of two years could comfortably get into them. There is some reason to suppose that the little race still survives. According to the Indian guide who led Dr. and Mrs. Le Plongeon to the ruins, and who professed to have seen the dwarfs frequently, they are very small and quite shy, appearing only at night, with large hats on their heads, and never speaking to those whom they meet. Many of our readers are old enough to have seen the "Aztec children," the diminutive specimens of a race supposed to be extinct, which were exhibited about the country twenty-five years ago; and it is not impossible that the remnant of tribes which occupied the country long before the Toltec conquest may be found in the valleys of the Cordilleras, just as representatives of nearly all the ancient European races are found still existing in the remoter Alpine valleys.

EVERY suggestion relating to the deposition of metals in veins in the rocks has a certain importance as tending to give greater certainty to the efforts of miners to find these veins. At present, the science of mining, particularly for the precious metals, is almost a lottery. If gold or silver is suspected to exist in a given place, shafts are sunk there, and if veins of metal are cut by the shaft, they are followed up by lateral excavation, until they either become so slender that the metal obtained from them does not pay for the labor of extracting it, or are cut off entirely by a fault in the strata. In many cases the shaft fails to intercept a vein, and laterals must then be run at random until ore is reached, or the attempt is abandoned. The common theories of the formation of metallic veins give the miner little help in searching for them. It is evident enough that they come in some way from the infiltration of liquid or dissolved minerals or metals into fissures in the matrix rock, but the art of finding fissures so occupied, or the sources from which come the precious substances which fill them, is as yet very little developed. In fact, geologists are far from agreed as to whether metallic veins are filled from above, by slow deposition from solutions, or from below, by volcanic action, which forces metallic ores, either melted or dissolved in water or gas, into the available crevices, and leaves them there to solidify. The fact that the interior substance of the earth is far heavier than the solid crust, and must, apparently, consist almost entirely of melted metal, gives some support to the latter theory, but many other circumstances oppose it, and as sea-water is found to contain all the metals in small quantities, the theory that most metallic veins have originated in some way from the separation of the metals from water is perhaps the most popular.

OF late, however, a new theory has been put forward, which seems to combine the plausible features of the other two. This theory, which appears to be due to Professor Sandberger of Wurzburg, and is described in *La Génie Civil* by M. Ernest Chabrand, is known as the Theory of Lateral Secretion, and regards the deposit of metallic ores in veins as the result

screen that Antony, in the following year, fixed the head and hands of his enemy, the aged Cicero, in revenge for speeches which he had delivered from this very place. —*London Saturday Review.*

THE NINETEENTH ANNUAL CONVENTION, A. I. A.

SECRETARY'S OFFICE, 10 CATHARINE ST.,
NEWPORT, R. I., August 31, 1885.

To ——: —

Dear Sir, — The Nineteenth Annual Convention of the American Institute of Architects will convene on Wednesday, the 21st of October next, in the Senate Chamber of the State Capitol at Nashville, Tenn. The sessions of the Convention to continue through both Wednesday and Thursday, October 21st and 22d.

The Committee of Arrangements appointed by the Board of Trustees, has made every effort to perfect a complete and attractive programme for both the business and social meetings. They have been greatly aided in this connection by the courteous offers of hospitality received from the citizens of Nashville.

The complete programme of exercises has not yet been perfected in all its details; but it is deemed advisable to issue at once a general circular, giving to members of the A.I.A. an idea of the scope and aims of the approaching Convention.

This outline sketch of programme is in brief, as follows:

1. An exhibit of architectural drawings and building materials in the rooms of the Art Association of Nashville. To the exhibition of drawings it is hoped that contributions will be sent by many members of the Institute.

The building materials exhibited will be such as are known to Tennessee.

2. *First Day*, Forenoon — Meeting of the A.I.A. Afternoon — Visit to some of the principal buildings in and around Nashville. Evening—Public Reception and Concert complimentary to the A.I.A. by the Art Association of Nashville.

3. *Second Day*, Forenoon—Meeting of the A.I.A. Afternoon—Visit to "Belle Meade," the famous stock-farm of General Harding. Evening—Banquet complimentary to the A.I.A. by the Art Association of Nashville.

It will also be the endeavor of the Committee to present several papers upon technical and artistic topics, to be followed by short discussions.

The second circular, to be issued about the 1st of October, will give the whole programme for the Convention in detail, with routes of travel, cost of transportation, and reduced rates for hotel accommodation at Nashville.

Appended to this circular will be found a letter from the Secretary of the A.I.A. to the *American Architect and Building News* of August 22d, setting forth the importance of the approaching convention to the interests of American architecture, together with the earnest desire of the Committee of Arrangements, and the Board of Trustees, to make it a success in every particular. The Committee trusts that you may be able to be present at the Convention, and that you will also endeavor to induce other members of the Institute to join you in visiting this, our first Southern meeting.

Respectfully submitted,

WILLIAM C. SMITH,
W. L. B. JENNEY,
GEORGE C. MASON, JR.,
A. J. BLOOR,
Committee of Arrangements.

All letters and communications relating to the Convention will be received by William C. Smith, Chairman of the Committee, 1 Berry Block, Nashville, Tenn., or

GEORGE C. MASON, JR., *Secretary, A.I.A.*

NOTES AND CLIPPINGS.

THE DECAY OF WOOD. — In some tests made with small squares of various woods buried one inch in the ground, the following results, says the *Garden*, were noted: Birch and aspen decayed in three years; willow and horse chestnut in four years; maple and red beech in five years; elm, ash, hornbeam, and Lombardy popular in seven years; oak, scotch fir, Weymouth pine, and silver fir decayed to a depth of one-half inch in seven years; larch, juniper and arbor-vitæ were uninjured at the expiration of the seven years.

MEMBERS FOR A BRITISH ACADEMY. — Rather more than a year ago the American journal, the *Critic*, asked for the opinions of its subscribers as to the forty Americans who, in the event of the establishment of an American Academy after the model of the Académie Française, would be first entitled to become members of it. This summer an imaginary British Academy has been formed by a similar process. The forty chosen ones are: Lord Tennyson, Prof. Huxley, W. E. Gladstone, Prof. Tyndall, G. A. Sala, Mr. Ruskin, Herbert Spencer, Matthew Arnold, Sir H. Thompson, W. Black, Sir J. Lubbock, Duke of Argyll, Leslie Stephen, George Meredith, Sir Richard Owen, Cardinal Newman, Mr. Browning, R. A. Proctor, Mr. Froude, John Morely, Lord Dunraven, Henry Irving, A. C. Swinburne, E. A. Freeman, Walter Besant, Edward Arnold, G. Macdonald, Justin McCarthy, James Payn, Mr. Wills, W. Morris, Prof. Blackie, Archdeacon Farrar, Baring Gould, Wilkie Collins, Lord Lytton, Prof. Skeat, Andrew Lang, Prof. Gardiner, and Austin Dobson. Some great names are conspicuous by their absence from this list, but the selection is not upon the whole an unrepresentative one, and it is particularly interesting as showing the extent to which, thanks no doubt to the cheapness of the reprints supplied to them, our American cousins pursue the study of our most modern literature. It would be well if the transatlantic appreciation of the labors of these and other living Englishmen meant proportionate remuneration to our unfortunate authors. It may be satisfactory to a writer to know that his books are read by thousands of sympathetic men and women who live between New York and San Francisco; but at present he is sadly conscious that his American popularity profits him little or nothing. The publisher who sells a reprint of "The Data of Ethics" for 10 cents does not, we imagine, contribute very largely to Mr. Herbert Spencer's income; and he must be indeed a philosopher who can find consolation for having been robbed in the fact that he has been elected a member of an academy in Utopia. — *London Daily News.*

THE AUGUST FIRE-LOSS. — The New York *Daily Commercial Bulletin*, of September 4, estimates the fire-losses in the United States and Canada, during August, at $5,500,000. This is a decided improvement upon former records, the average aggregate of fire-loss in August or ten years past being $7,000,000. In August, 1884, the fire-loss was about $10,000,000. The *Bulletin* thinks there is ground for encouragement in so favorable an exhibit. Nevertheless the fire-losses of the year, to the end of August, foot up $65,500,000, with four months yet to hear from.

HOW THE FIRST HOUSE IN SAN FRANCISCO WAS ROOFED. — I will add a short account of the building of the first house in what is now the great city of San Francisco, for I never have seen any correct relation of it. The house was built by William Richardson, an Englishman, in 1836. It was of adobes—squares of sun-baked clay, about four inches thick, and some twenty inches, or so, square on the surface. The house was put up on a hill or rising ground, 300 yards, more or less, from the beach used as a landing. Richardson had, some years before, married into the Sanchez family. His wife was a most excellent woman, far too good for her husband, who was an idle, dilatory man, not without intelligence, but without force or decision of character. After the walls were up, rafters for a steep roof were put in place and secured with strips of raw-hide. It was Richardson's intention to cover over with tiles taken from some of the old abandoned houses at the Mission. But without doing so at once, feeling too confident of a continuance of dry weather, he put his wife, four or five children, and all his household belongings into it and began housekeeping. Unhappily, he had delayed too long with his roof; it came on squally one afternoon with rain, and the edge of night was drawing near. Richardson rushed to the beach like one frantic, and signalled for a boat. I guessed the trouble. Before he got over the gangway he called out: "Oh you see my distress! Indeed, indeed, we are all in a sad plight, for all I care for or have is exposed to the weather. Sell me or loan me some old sails to shelter us as quickly as possible." "Not another word, Richardson," I said. "You shall instantly have all the help this ship can give you." All hands were turned up, away went the men aloft, the fore and maintopsails were unbent and lowered into the launch—two boats, with the second officer and their crews, pulled with quick and strong strokes to the beach; active and willing hands, well used to handling canvas promptly covered over house and household. This was the first roof to the first house built in San Francisco; and that house stood long enough to have a history, for in after years it was used as a post-office and as a custom-house; and the first man executed by the "Vigilance Committee" was hanged from it. — *Correspondence of the New York Evening Post.*

THE NORTH SEA SHIP-CANAL. — News comes from Berlin that the long contemplated ship-canal from the Baltic, through Holstein, to the North Sea, is at last likely to be made. The cost of the undertaking is estimated at nearly $40,000,000, of which one-third is to be borne by Prussia, the remainder being distributed over the other parts of the German Empire. The Government is now engaged upon the details of a measure for the furtherance of the whole project, which is spoken of as a work of peace proper to be undertaken in a time of peace. The German scheme is not the first plan of the kind for facilitating communication between the Baltic and North Seas. It is now just a century since the so-called Eider Canal was opened for traffic by the Danish Government. This waterway traverses the peninsula between the port of Kiel on the east and the mouth of the River Eider on the west coast of Schleswig-Holstein — between which provinces it forms the frontier — the "canal" being, in fact, constituted for half its length of the deepened bed of the river. Projected on such an insufficient footing, the passage of the Sound, Cattegat and Skager Rack is still enforced upon all ships of more than nine feet draught sailing from or returning to the Baltic ports. It was obvious that the construction of a canal on some more commensurate scale could be only a question of time. The revenue that must accrue from the diversion of the traffic from the circuitous northern route to a short cut through the neck of the peninsula; the saving to shipping of time, risk and wear-and-tear — these considerations have been weighed by the German Government, with the result which is now shortly to be made apparent. The new waterway will make Kiel one of its termini, from which port it will run in a south-westerly direction until it debouches in the estuary of the Elbe. The distance to be traversed is about sixty miles, and the canal is designed to afford easy passage to vessels of the heaviest tonnage. Thirty years ago some 20,000 ships used to pass through the Sound annually, the dues upon which were worth $750,000 per annum to Denmark; but at a convention of fifteen of the chief maritime States, held in 1857, these dues were commuted by the payment of a lump sum of $16,500,000 to the Danish Government. The hostility with which the new undertaking appears to be regarded in Denmark is not, therefore, quite reasonable. Such a canal has been looked forward to by the mercantile marine of all nations almost as a commercial necessity; and since the absorption of Schleswig-Holstein by Germany its construction by that power has been regarded as an inevitable consequence of the political event. At the same time Denmark can hardly, perhaps, be expected to view the project with indifference; and the withdrawal of so many vessels from her much reduced coast line must be allowed to have an appreciable bearing upon her future prosperity. — *Iron Age.*

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

324,803. CLAMP.—Fredrick J. Bancroft, Pawtucket, R. I.

324,818. LOCK.—George B. Cowles, New Britain, Conn.

324,819. SASH-BALANCE.—Levi M. Devore, Freeport, Ill.

324,830. SASH-FASTENER—Lee S. Garrett, Fulton, Ky.

324,841. APPARATUS FOR UTILIZING THE WASTE HEAT FROM RANGES.—William T. Holland, Brooklyn, N. Y.

324,842. SCROLL-SAWING MACHINE.—Henry L. Hopkins, Caro, Mich.

324,847. WOOD-TURNING LATHE.—William A. Kettenring, Defiance, O.

324,855. DRAWING-BOARD.—Charles N. Leonard, Indianapolis, Ind.

324,860. PROCESS OF DECORATING PAPER AND OTHER MATERIALS WITH OIL-COLORS.—Mary B. Martin, New York, N. Y.

324,874. SWING-JOINT FOR STEAM.—Horace J. Morton, Chicago, Ill.

324,883. SASH-FASTENER.—Edward T. Prindle, Aurora, Ill.

324,885. SASH-HOLDER.—Frank L. Rosentreter, Cleveland, O.

324,914. FIRE-ESCAPE.—Edward H. Bergmann, Cimarron, N. Mex.

324,915. GONG DOOR-BELL.—Rudolph R. Buehler, Philadelphia, Pa.

324,929. SUPPORT FOR STEAM-PIPES.—John Finnegan, Philadelphia, Pa.

324,941. FABRIC FOR WALL DECORATION.—John Klee, New York, N. Y.

324,943. TRANSOM-LIFTER.—Albert Langstrom, Council Bluffs, Ia.

324,971. FIRE-ESCAPE.—Richard Woollscroft, Streator, Ill.

324,977. AUTOMATIC FIRE-EXTINGUISHER.—Chas. Barnes, Dayton, Ky.

324,989. SHUTTER-WORKER.—Jehiel C. Driggs, Newark, N. J.

324,994. METALLIC ROOFING.—Frank A. Guthrie, Gallipolis, O.

325,001. WRENCH.—John McLean, Camden, Ala.

325,010. WRENCH.—Daniel R. Porter, Revere, Mass.

325,028. LOCK.—Charles F. Veit, London, Eng.

325,032. CHIMNEY-CAP.—Jerome W. Wetmore, Erie, Pa.

325,036. COMBINED CALIPER PROTRACTOR, AND BEVEL.—Frederick W. Woodhull, Lincoln University, Pa.

325,090. WALL-COVERING.—George Jordan, New York, N. Y.

325,142. FIRE-ESCAPE.—John H. Wilson, Camden, N. J.

325,153. OVERFLOW-FIXTURE TRAP.—Frederic L. Brown, Scranton, Pa.

325,157. HANDSAW.—George N. Clemson, Middletown, N. Y.

325,160. PAINT COMPOSITION.—Platt C. Connell, Chicago, Ill.

325,172. SHEET-IRON LOCK-JOINT SPILE.—Hirom C. Herron, Cleveland, O.

325,180. FIRE-ESCAPE.—Franz Kogoschek, Hoboken, N. J.

SUMMARY OF THE WEEK.

Baltimore.

HOTEL AND STORES.—W. F. Weber, architect, has prepared plans for P. Fitzpatrick for a three-st'y brick and brown-stone building to be used as a hotel, 62′ 6″ x 64′, and 3 three-st'y brick and brown-stone buildings, 18′ x 62′ each, adjoining, to be erected on Charles St., near the Falls, and to cost $25,000; August Dagenhart, builder.

BUILDING PERMITS.—Since our last report twenty-four permits have been granted, the more important of which are the following:—

S. Richmond, three-st'y brick building, s e cor. Harford Ave. and Hoffman St.

Fredk. Cook, three-st'y brick building (sq.), n s Sarah Ann St., bet. Pearl and Pine Sts.

Church of Our Saviour, three-st'y brick parsonage, s w cor. Broadway and McElderry St.

Colin Stewart, three-st'y brick stable, s e cor. North and Mt. Royal Aves.

Bernhard Link, 2 two-st'y brick buildings, e s Port Alley, bet. Lancaster and Aliceanna Sts.

W. A. Moale, 6 two-st'y brick buildings, s s Ostend St., e Light St.; and 2 two-st'y brick buildings, n s Gittings St., in rear.

Jas. P. McGovern, 2 three-st'y brick buildings, w s Aisquith St., n Preston St.

E. Berkley, four-st'y brick building, 25′ x 64′, s s Franklin St., w Howard St.

J. W. Stewart, 21 two-st'y brick buildings, com. n w cor. Hanover and Barney Sts.; and three-st'y brick building, n s Barney St., w Hanover St.

F. Wilkerson, 3 two-st'y brick buildings, w s Stockton Alley, bet. Edmonson and Harlem Aves.

Morgan Bros., 3 two-st'y brick buildings, n s Stockholm St., bet. Pinkney Alley and Washington Road,

Chas. F. Naimuth, three-st'y brick building, w s Washington St., n Jefferson St.

Boston.

COURT-HOUSE.—Mr. John McArthur, Jr., architect of Philadelphia, will serve with the court-house commission as expert to decide upon the merits of the preliminary plans to be submitted September 16 for the new court-house.

BUILDING PERMITS.—*Wood.—Swett St.*, near N. Y. & N. E. R. R., mechanical, 25′ x 40′; owner, Bradley Fertilizer Co.; builder, C. Tilden, Jr.

Condor St., near Putnam St., dwell., 20′ x 28′; owner, William Davis; builder, Vincent McIsaacs.

Allston St., near Melville Ave., dwell., 29′ x 32′ 6″; owner, Arthur H. Vinal; builder, E. Shapleigh.

Allston St., near Melville Ave., dwell., 25′ x 31′; owner, Arthur H. Vinal; builder, E. Shapleigh.

Adams St., cor. Malvern St., stable, 25′ x 30′; owner, Mrs. W. Tileston; builder, F. M. Severance.

Cottage St., near Clifton St., dwell., 24′ x 31′; owner and builder, W. W. Dromney.

Washington St., No. 2478, storage, 66′ x 100′; owner, P. B. Smith; builder, Peter Hutchinson.

Winthrop St., near Blue Hill Ave., dwell., 22′ x 28′; owner and builder, W. H. Handy.

Armandine St., near Milton Ave., dwell., 25′ x 28′; owner and builder, Ephraim Moulton.

Washington St., near Melville Ave., dwell., 40′ x 40′, owner, S. J. Capen; builder, A. B. Sherman.

Barnard Pl., near Barnard St., dwell., 15′ x 26′; owner, Mrs. C. Jackson; builder, A. B. Sherman.

Blue Hill Ave., cor. Private Way, dwell. and store, 24′ x 33′; owner, Thomas Mulhern; builder, W. V. Tent.

Rand St., s, dwell. and store, 24′ x 33′; owner, Thomas Mulhern; builder, W. V. Tent.

Private Way, from Blue Hill Ave., dwell. and store, 23′ x 33′; owner, Thomas Mulhern; builder, W. V. Tent.

Rand St., s, 2 dwells. and stores, 23′ x 33′; owner, Thos. Mulhern; builder, W. V. Tent.

Tremont St., No. 1159, storage, 10′ x 21′; owner, and builders, Hayward & Co.

Ashley Ave., near Ford Ave., dwell., 24′ x 30′; owner, Thomas Murray; builder, Thomas Yermans.

Brooklyn.

BUILDING PERMITS.—*Fourteenth St.*, s s, 97′ 10″ w Sixth Ave., 9 two-st'y frame (brick-filled) dwells., tin roofs; cost, each, $2,500; owners and builders, John Walters & Son, 375 Pacific St.

Suydam St., s s, 310′ 11″ e Myrtle Ave., 2 three-st'y frame tenements (brick-filled) tin roofs; cost, each, $4,900; owner and builder, George Straub, 11 Lewis Ave.; architect, Th. Engelhardt.

Monroe St., s s, 300′ w Ralph Ave., 3 two-st'y brick dwells., tin roofs; cost, total, $9,975; owner, B. A. Demill, Sumpter St., cor. Stone Ave.; architect, F. Holmberg; builder, F. Stemler.

Atlantic Ave., n s, 50′ w Nostrand Ave., 4 two-st'y brick dwells., tin roofs; cost, total, $8,000; owner, J. J. Drake, 397 Fulton St.; architect and builder, J. N. Smith.

Bergen St., s s, 80′ e Franklin Ave., two-st'y brick stable, gravel roof, iron cornice; cost, $2,500; owner, O. B. McAveney, 992 Bergen St.; architect, W. H. Hazzard's Sons.

Sumpter St., n w cor. Howard Ave., two-st'y frame (brick-filled) store and dwell., tin roof; cost, $3,000; owner, J. V. Hasselu, Marion St.; architects and contractors, Ames & Waldron; mason, E. Sutterlin.

Seventeenth St., n s, 225′ e Fourth Ave., three-st'y brown-stone dwell., tin roof; cost, $8,700; owner, W. H. Williams, 607 Third Ave.; builder, Geo. Ingram.

Fulton St., s s, 280′ e Howard Ave., three-st'y brown-stone store and dwell., gravel roof; cost, $6,000; owner, Th. Donohue; architect, B. T. Robbins.

Fulton St., s s, 40′ e Howard Ave., 9 brown-stone dwells., 8 three-st'y and 1 two-st'y, gravel roofs; cost, each, $6,000 and $4,500 for 1; owner and architect, Benj. T. Robbins, Northport, L. I.; builder, E. K. Robbins.

Moffat St., s s, 150′ e Knickerbocker Ave., two-st'y frame (brick-filled) dwell., tin roof; cost, $2,600; owner, John Morrow, 1279 De Kalb Ave.; architect, H. Vollweiler.

Fayette St., No. 19, n s, near Broadway; three-st'y frame store and tenement, tin roof; cost, $4,200; owner, Jacob Kraus, 19 Fayette St.; architect, H. Vollweiler.

Elm St., s s, 120′ e Broadway, three-st'y frame (brick-filled) flat, tin roof; cost, $4,000; owner, architect and builder, H. Vollweiler, 788 Broadway.

Debevoise St., s s, 44′ w Morrell St., three-st'y frame (brick-filled) tenement, tin roof; cost, $4,000; owner, John Wegeman, 100 Debevoise St.; architect, H. Vollweiler.

Park Ave., s s, 90′ e Nostrand Ave., three-st'y frame factory, tin roof; cost, $11,500; owner, Thos. W. Hynes, Flatbush; architect, T. F. Houghton; builders, S. H. O'Rourke and D. Ryan.

Willoughby Ave., s w cor. Hall St., 5 three-st'y brown-stone dwells., tin roofs; cost, each, $4,500; owner and builder, Henry L. Coe, 535 Washington Ave.; architect, A. Hill.

Vanderbilt Ave., No. 32, three-st'y brick tenement, tin roof; cost, $5,500; owner, Mrs. Newton, 32 Vanderbilt Ave.; architect, W. M. Coots; masons, Assip & Buckley.

Hart St., s s, 100′ w Marcy Ave., 4 two-and-a-half-st'y brown-stone dwells., tin roofs; cost, each, $5,000; owner and builder, Thomas E. Greenland, 256 Kosciusko St.; architect, I. D. Reynolds.

Concord St., s e cor. Liberty St., four-st'y brick laundry, tin roof; cost, $30,000; owner, J. P. Traffe, 202 Fulton St.; architect, C. F. Eisenach; builders, T. B. Rutan and W. Zang.

Union Ave., w s, 50′ s Grand St., four-st'y brick store and tenement, tin roof; cost, $10,000; owner, L. Wintgen; builders, J. Rodwell and S. Hough.

Dean St., s s, 200′ w Vanderbilt Ave., two-st'y brick factory, tin roof; cost, $3,000; owners, H. Humbert & Co.; architect, R. Dixon; builder, J. Gordon.

Water St., near Fulton St., on Bridge property, two-st'y brick station, slate roof; cost, $7,000; owner, Brooklyn Elevated Railroad, 49 Fulton St.; architect, J. Mumford; builders, T. B. Rutan and E. Snedeker.

Gates Ave., n s, 25′ e Marcy Ave., three-st'y brick store, tin roof; cost, $6,700; owner, John Canabes, Marcy and Gates Aves.; architect, I. D. Reynolds; builders, J. Rickard and T. Donnelly.

Decatur St., s s, 40′ e Sumner Ave., 2 three-st'y brown-stone dwells., tin roofs; cost, $14,000; owner, J. M. Brown, 527 Quincy St.; architect, A. Hill.

Marion St., s s, 125′ e Howard Ave., two-st'y frame (brick-filled) dwell., tin roof; cost, $5,000; owner, Charles Schmitt, 188 Marion St.; builders, J. Pirrung and C. Horn.

Fourth Ave., e s, 25′ s Twelfth St., two-st'y brick stable, gravel roof; cost, $3,500; owners and masons, Assip & Buckley; architect, W. M. Coots.

Seventh Ave., n e cor. Tenth St., 2 three-st'y brown-stone stores and dwells., tin roofs; cost, total, $12,000; owner, J. Nickenig; architect, R. Dixon; builder, L. Bonnard.

Union St., s s, 150′ w Bond St., three-st'y brick dwell., tin roof; cost, $6,000; owner and architect, William Clemens, 438 Union St.

Hicks St., No. 475, e s, 275′ s Harrison St., four-st'y brick tenement, tin roof; cost, $10,000; owner, N. H. Frost, 41 Remsen St.; architects, W. H. Hazzard's Sons.

Bedford Ave., w s, 62′ n Lexington Ave., 2 five-st'y brick tenements and stores, tin roofs; cost, abt. $25,000; owner, J. M. Horton Ice Cream Co., 453 Fulton St.; architect, F. E. Lockwood.

ALTERATION.—*Bedford Ave., No.* 599, new plastering and repair damage by fire; cost, $7,000; owner, architect and builder, Thomas H. Brush, 128 Flatbush Ave.

Chicago.

BUILDING PERMITS.—M. McGinnis, 3 two-st'y dwells., 997-1001 West Harrison St.; cost, $6,000; Strippleman, architect.

N. Lutz, two-st'y dwell., 857 Thirty-fourth St., cost, $2,700.

J. Tobison, three-st'y stores and flats, 2837-2839 Cottage Grove Ave.; cost, $12,000; architect, J. M. Vanosdel.

G. F. Fricke, two-st'y dwell., 3747 Walnut St.; cost, $4,500; architect, F. Ahlschlager.

J. D. Vorak, three-st'y flats, 484 Jefferson St.; cost, $5,000.

F. Suva, three-st'y flats, 32 O'Brion St.; cost, $4,300.

A. Mulinke, two-st'y dwell., 432 Lincoln Ave.; cost, $2,700.

H. M. Fox, two-st'y dwell., 3763 Ellis Ave.; cost, $3,000; architect, L. B. Dixon.

W. G. Jackson, two-st'y dwell., 937 West Adams St.; cost, $8,000.

A. D. Coleman, two-st'y addition, 2738 Portland Ave.; cost, $3,700.

L. Schutt, two-st'y flats, 119 Seminary Ave.; cost, $3,000.

O. H. Niedner, cottage, 388 West Division St.; cost, $3,400.

C. Sheer, 2 three-st'y dwells., 3406-3408 State St.; cost, $7,000; architects, Thomas & Rodger.

A. Kuh, two-st'y dwell., 3142 Michigan Ave.; cost, $10,000; architects, Adler & Sullivan.

J. Long, two-st'y flats, 351 Lincoln Ave.; cost, $4,500.

Wm. Sims, two-st'y flats, 1142 Taylor St.; cost, $2,800.

O. C. Walcott, three-st'y dwell., 3831 Vincennes Ave.; cost, $3,000.

H. Sweet, 3 two-st'y stores and flats, 1454-1456 Milwaukee Ave.; cost, $6,000; architect, C. Hulke.

P. Powers, two-st'y flats, 346 Polk St.; cost, $3,500; architect, N. Provost.

M. W. Carter, two-st'y barn and milk depot, 444-446 Adams St.; cost, $3,000.

G. A. Webb, two-st'y dwell., 978 Wilcox Ave.; cost, $3,000; architect, G. A. Webb.

J. Plamondon, three-st'y flats, 461 Wood St.; cost, $3,500; architect, J. L. Leban.

T. Brennan, two-st'y dwell., 634 Ashland Ave.; cost, $3,500; architect, J. J. Flanders.

W. C. Seipp, two-st'y dwell., 2958 Groveland Ave.; cost, $6,000, architect, C. Cudell.

M. Laux, three-st'y flats, 39 Delaware Pl.; cost, $5,000; architect, J. Huber.

T. W. Wolff, shop, 302-306 Hawthorne Ave.; cost, $3,000.

F. Greenwald, two-st'y store and dwell., 183 West North Ave.; cost, $2,900.

H. Schell, three-st'y store and flats, Wentworth Ave.; cost, $8,000.

J. E. Taylor, two-st'y dwell., 2954 Calumet Ave.; cost, $18,000.

M. C. Dobbin, one-st'y addition, 267-273 Twentieth St.; cost, $3,000.

Chicago City Railroad Co., Thirty-ninth and Cottage Grove Ave.; cost, $6,000.

N. Busch, elevator, Cherry St.; cost, $12,000.

F. Furlong, two-st'y store and flats, 502 Austin Ave.; cost, $2,800.

J. H. Blair, two-st'y flats, 470 Carroll Ave.; cost, $3,500; architect, J. H. Blair.

Mrs. A. Miller, dwell., 582 Sedgwick St.; cost, $6,000; architect, F. Berlin.

A. J. Doyle, two-st'y dwell., 500 West Jackson St.; cost, $5,500.

J. Lindahl, two-st'y flats, 451 Dayton St.; cost, $7,000; architect, Strippleman.

Mrs. M. G. Clancy, two-st'y dwell., 3244 Vernon Ave.; cost, $4,000; architect, R. Ray.

Mrs. R. Corlett, two-st'y flats, 1008 Halsted St.; cost, $3,000.

P. O'Donnell, remodel church; cost, $10,000.

R. Herbert, two-st'y dwell., 183 Fremont St.; cost, $2,700.

Phœnix Distillery Co., four-st'y distillery, Clybourne Ave.; cost, $18,000; architect, P. J. Killen.

Dr. M. W. Cortley, 2 two-st'y dwells., 295-297 Centre Ave.; cost, $6,000.

J. Hoffman, three-st'y stores and dwells., 464-470 Ogden Ave.; cost, $17,000; architect, A. Smith.

C. L. Jenks, 8 three-st'y dwells., Clark St.; cost, $37,000; architect, J. Spyer.

T. Raymond, 3 three-st'y dwells., 303 and 305 Indiana St.; cost, $11,000; architect, E. M. Branch.

Cincinnati.

BUILDING PERMITS. — William Schubert, Jr., brick building, Sumner and Gest Sts.; cost, $4,000.

Mr. Toharke, three-and-a-half-st'y brick building, Flint and Dalton Sts.; cost, $9,000.

G. H. Plump, two-st'y brick building, Vine and Mulberry Sts.; cost, $2,750.

Wm. H. Stewart Sons, three-st'y stone building, Seventh and Walnut Sts.; cost, $4,186.50.

G. W. Vaughan, three-st'y brick building, McMillan and Kemper Lane; cost, $7,000.

B. Barr, two-st'y frame building, Hibby and Wayne Sts.; cost, $2,500.

S. Frey Sons, two-st'y brick building, Colrain Pike and Queen City Sts.; cost, $4,000.

Henry Weiman, four-st'y brick warehouse, Pearl and Plum Sts.; cost, $3,000.

D. Fischer, two-st'y brick building, Colrain Pike and Straight St.; cost, $3,000.

Steinman & Meyer, four-st'y brick building, Sixth and Linn Sts.; cost, $5,500.

H. Robinson & Co., two-st'y frame buildings, State and Liberty Sts.; cost, $3,000.

Jno. H. Meyer, two-st'y frame buildings, Glenway Ave. and Gest St.; cost, $3,000.

Permits to date, 664.

Total cost of repairs, $137,201.50.

Kansas City, Mo.

BUILDING PERMITS. — William Long, three-st'y business block, 10, 12 and 14 Missouri Ave.; cost, $20,000.

Norton & Beatty, block of 6 cut-stone front houses, 1301, 1303, 1305, 1307, 1309 and 1311 East Fifteenth St.; cost, $25,000.

Almira Hayes, brick business house and dwell., cor. Forest and Independence Aves.; cost, $8,000.

James L. Withrow, brick block, East Fourteenth St.; cost, $16,000.

Edward Duffy, brick block, cor. of Fifth and Tracy Sts.; cost, $3,500.

Alice Robinson, brick house, cor. Sixth and Harrison Sts.; cost, $5,000.

A. L. Mason, five-st'y brick and cut-stone business block, 50′ x 112′, 1207, 1209 and 1211 Main St.; cost, $77,000.

Minneapolis, Minn.

BUILDING PERMITS. — Wm. Buchlen, two-st'y wood dwell., n s Irving Ave., bet. Third Ave. and Sixth Ave., n; cost, $8,000.

Island Power Company, alteration stone factory, Nicollet Island; cost, $9,000.

J. H. Rowell & Co., two-st'y wood dwell., w s Garfield Ave., bet. Lake St. and East Thirty-first St.; cost, $4,800.

Frank Holmes, two-st'y stone veneer dwell., n e s Thirteenth St., bet. Hennepin and Hawthorne Aves.; cost, $15,000.

City of Minneapolis, two-st'y brick engine-house, s cor. Seventh Ave. and Eighth St.; cost, $9,000.

New York.

CITY WORK. — Comptroller Loew has returned about 100 contracts to the Commissioner of Public Works without his approval of sureties, as by the late amendment of the constitution no money can be appropriated for payment of work for city improvement during the present fiscal year.

HOUSES. — For the Manhattan Construction Co., 14 three-and-four-st'y houses, brick, stone and terra-cotta fronts, are to be built on the n s Sixty-third St., bet. Ninth and Tenth Aves.; from plans of Mr. Wm. B. Tuthill.

On the s e cor. One Hundred and Twenty-sixth St. and Eighth Ave., 6 three-st'y and basement dwells., of brick, stone and terra-cotta, are to be erected for the Nassau Building Co., at a cost of about $60,000; from designs of Mr. A. I. Finkle.

On One Hundred St. and Riverside Ave., a house 56′ x 100′, is to be built for Mr. Peter Doelger; from plans of Mr. Wm. Shickel.

Herter Bros. have filed plans for 9 four-st'y brick houses and stores on Avenue A, bet. Seventy-ninth and Eightieth Sts., for Francis T. Schnugg; cost, $150,000.

BUILDING PERMITS. — *Clinton St., No.* 131, five-st'y brick tenement, tin roof; cost, $18,000; owner, Tobias Krakower & Co., 86 Attorney St.; architect, Chas. Rentz.

Fifteenth St., s s, 56′ e Avenue A, five-st'y brick tenement with store, tin roof; cost, $6,000; owner, Ph. Deffaa, 539 Sixth St.; architect, Wm. Graul.

West Fifty-first St., No. 542, five-st'y brick (stone front) tenement, tin roof; cost, $20,000; owners, Huston Bros. on premises; architect, C. A. French.

Sixth Ave., n w cor. Fifty-second St., 3 five-st'y and attic brick flats with stores, tin roofs; cost, total, $50,000; owner, Peter Doelger, 405 East Fifty-fifth St.; architect, J. Kastner.

East Eightieth St., No. 2, four-st'y brick dwell., mansard roof of slate, iron and tin; cost, $50,000; owner, Mrs. Sarah Weissman, 670 Broadway; architects, A. Zucker & Co.

Eighty-fifth St., n s, 98′ e Avenue A, five-st'y brick tenement, tin roof; cost, $18,000; owner, M. Schneider, 419 East Eighty-first St.; architect, J. Kastner.

Eighty-eighth St., s w cor. Lexington Ave., stone front church, peak roof slated; cost, $78,000; owners, Trustees of the German Evangelical Lutheran Immanuel Congregation, present church Eighty-seventh St., bet. Third and Lexington Aves.; architect, Arthur Crooks; builders, J. D. Murphy and James Thompson.

One Hundred and Fifth St., n s, 145′ e Lexington Ave., 3 five-st'y brick tenements, tin roofs; cost, each, $14,000; owner, M. H. Schneider, 419 East Eighty-first St.; architect, J. Kastner.

One Hundred and Fifth St., n s, 182′ Lexington Ave., two-st'y brick stable, tin roof; cost, $5,000; owner and architect, same as last.

One Hundred and Fifteenth St., s s, 80′ w Second Ave., four-st'y brick (stone front) flat, tin roof; cost, $12,000; owner and builder, John Walker, 233 East One Hundred and Thirteenth St.; architect, J. H. Valentine.

East Eighty-fourth St., No. 5, five-st'y brick flat, tin roof; cost, $25,000; owner, Augustin Walsh, 3 East Eighty-fourth St.; architect, Wm. Schickel.

First Ave., 1708 *and* 1710, 2 five-st'y brick tenements with stores, tin roofs; cost, each, $13,000; owner, Peter J. Uihlein, 355 East Eighty-seventh St.; architect, John Brandt.

Seventy-eighth St., n s, 250′ w Ninth Ave., 2 four-st'y brick dwells.; and 4 three-st'y brick dwells., tin and iron roofs; cost, 2 each, $18,000, and 4 each, $14,000; owner, B. S. Levy, 110 East Seventy-fourth St.; architect, R. Guastivino.

One Hundred and Fourth St., s w cor. Tenth Ave., three-st'y brick home, slate and tin roof; cost, $57,000; owner, Home for the Relief of the Destitute Blind, C. H. Leland, President; architect, F. Carles Merry; builder, J. J. Burchell.

One Hundred and Twenty-third St., n s, 100′ e Morningside Ave., 10 three-st'y brick dwells., deck roof tinned, mansard slated; cost, total, $95,000; owners, Keller & Tilford, 123 West Forty-seventh St.; architect, M. Louis Ungrich; builder, not selected.

Sixty-eighth St., s e cor. Ninth Ave., five-st'y brick tenement, tin roof; cost, $26,000; owner, David B. Algie, 432 West Fifty-seventh St.; architects, Thom & Wilson.

Sixty-eighth St., s s, 25′ e Ninth Ave., 6 four-st'y and basement brick (stone front) dwells., tin roofs; cost, each, $18,000; owner, etc., same as last.

One Hundred and Sixty-first St., n s, 78′ w Tenth Ave., two-st'y brick dwell., tin roof; cost, $4,000; owner, Thomas Fenton, Tenth Ave., cor. One Hundred and Sixty-first St.

One Hundred and Fifty-first St., n s, 275′ w Courtlandt Ave., two-st'y frame dwell. with brick basement, tin roofs, Schmidt & Garvin, builders; cost, $4,000; owner, Christian Ludwig, 677′ e One Hundred and Fifty-second St.; architects, Kramer Bros.

Washington Ave., e s, abt. 200′ s One Hundred and Seventy-sixth St., 2 two-st'y and attic frame dwells., cost, $3,500; owner, Annie H. O'Brien, 1839 Bathgate Ave.; architect, J. E. Kerby.

Washington Ave., w s, 135′ n One Hundred and Seventy-seventh St., three-st'y frame dwell., tin roof; cost, $3,000; owner, E. H. Flink, 1931 Washington Ave.; architect, C. S. Clark.

Tenth Ave., w s, 76′ n One Hundred and Fourth St., 2 five-st'y brick tenements, flat tin roof; cost, each, $20,000; owner, Franklin Thurston, 62 East One Hundred and Thirty-third St.; architect, Theo. Thomson, n e cor. Eighth Ave. and One Hundred and Twenty-fifth St.

Broadway, Nos. 1424 *and* 1426, seven-st'y brick flat, brick and stone front, flat tin roof; cost, $110,000; owner, Daniel S. McElroy, 246 Lexington Ave.; architect, F. T. Camp, 60 Liberty St.

West Fortieth St., Nos. 623 *to* 627, three-st'y brick building, flat roof covered with gravel to be used as a slaughter-house; cost, $22,000; owner, Jerome F. Sadler, Sturtevant House, N. Y.; architects, Arford & Cramer, 333 Paroma, Jersey City, N. J.

Sixth Ave., n w cor. Fifty-second St., 3 five-st'y brick tenements, flat tin roof; total cost, $50,000; owner, Peter Doelger, 405 East Fifty-fifth St.; architect, J. Kastner, 744 Broadway.

Barclay St., No. 71, brick store building, flat tin roof; cost, $7,000; owner, Estate Geo. W. Welch, cor. Greenwich St. and Park Pl.; architect, James E. Ware, 239 Broadway.

One Hundred and Twentieth St., n s, 95′ e Second Ave., 2 three-st'y and basement brick dwells., flat tin roof, brown-stone front; cost, each, $6,000; owner, John W. McSorly, 305 East One Hundred and Twentieth St.; architects, Cleverdon & Putzell, 110 East One Hundred and Twenty-fifth St.

Twelfth Ave., n e cor. One Hundred and Thirty-second St., two-st'y, store-house and refrigerator brick building, peak tin roof; owner, Thomas H. Wheeler, 448 West Thirty-fourth St.; architect, Joseph W. Norton, 403 West One Hundred and Twenty-sixth St.

East Thirteenth St., Nos. 515 *and* 517, 2 five-st'y brick tenements, flat tin roofs; cost, each, $15,000; owner, John A. Fay, 115 Second Ave.; architect, J. Kastner, 744 Broadway.

East One Hundred and Thirty-fifth St., No. 528, four-st'y brick tenement house, flat tin roof; cost, $10,000; owner, Gottleib Frick, 168 Lincoln Ave., architect, W. Thomas Beers, 429 East One Hundred and Twenty-second St.

East One Hundred and Forty-third St., No. 634, three-st'y and basement brick dwell., flat tin or gravel roof; cost, $10,000; owner, Samuel F. Pease, 710 East One Hundred and Forty-third St.; architect, John Anderson, 718 East One Hundred and Forty-third St.

One Hundred and Twenty-third St., s s, 100′ e Ninth Ave., 11 three-st'y and basement brick dwells., brown-stone front, flat tin roof; cost, each, $14,000; owners, J. W. & A. A. Tiets, 208 West One Hundred and Twenty-fifth St.; architect, J. H. Valentine, 108 East One Hundred and Twenty-fifth St.

Grand St., No. 225, five-st'y brick building, brick and stone front, flat roof covered with gravel; cost, $16,500; owner, Thomas S. Olleve, 107 East Sixtieth St.; architect, E. Sniffen, 317 Broadway.

Highbridge Road, 450′ e Jerome Ave. (Fordham), three-st'y wood dwell., slate roof; cost, $6,000; owner, Mrs. Aurelia Murray, Fordham; architects, C. V. Folin & Son, Fordham.

Jerome Ave., n e cor. Kingsbridge Road, two-st'y frame and brick dwell., wood front, peak tin roof; cost, $5,250; owner, John D. Armstrong, Fordham; architects, C. V. Folin & Son, Fordham.

East One Hundred and Fifty-sixth St., No. 663, two-st'y and basement brick and frame building; flat tin roof; cost, $3,200; owner, Theodore Housman, 659 East One Hundred and Fifty-sixth St.; architect, Edward Stichler, 551 East One Hundred and Fifty-fourth St.

Ninth Ave., n w cor. Twentieth St., four-st'y brick dwell., peak and flat roof covered with slate and tin; cost, $30,000; owner, General Theological Seminary, 409 West Twentieth St.; architect, Chas. C. Haight, 111 Broadway.

East Fifteenth St., No. 7, five-st'y brick building, brown-stone front, peak and flat roof, terra-cotta plates and tin roofs; cost, $100,000; owners, Young Men's Christian Association, 6 East Twelfth St.; architect, R. H. Robertson, 121 East Twenty-third St.

ALTERATIONS. — *First Ave., Nos.* 1641 *and* 1643, store front, iron columns, etc.; cost, $4,000; owner, Sophia Roberts, 206 Second Ave.; architects, Schwarzmann & Buchman.

Avenue A, No. 242, four-st'y brick extension, tin roof, also new store front; cost, $3,500; owner, Philip Deffaa, 539 Sixth St.; architect, W. Graul.

Greenwich St., Nos. 170 *to* 174, chimney built upon or raised; cost, $5,000; owner and builder, New York Steam Co., 22 Courtland St.; architect, C. E. Emery.

Seventh Ave., s e cor. Fifty-first St., four-st'y brick extension, felt and gravel roof; cost, $5,000; owners, Broadway & Seventh Ave. R.R. Co.; architect, S. D. Hatch.

Fiftieth St., n s, 197′ e Seventh Ave., new st'y to be added to two-st'y brick building, flat roof making same three-st'y, used as a blacksmith shop; cost, $5,000; owner, Broadway and Seventh Ave. R. R., Fiftieth St., cor. Sixth and Seventh Aves.; architect, Stephen D. Hatch, 115 Broadway.

Kingsbridge Road, 308′ w Webster Ave., an extension to two-st'y wood dwell., peak roof, slate and tin; cost, $2,500; owner, P. J. Keary, 78 East Eighty-first St.; architect, Geo. H. Budlany, White Plains.

West Fifty-third St., general internal alterations to four-st'y brick dwell., flat roof; cost, $3,000; owner, Sidney Dillon, 5 West Fifty-seventh St.; architect, Manley N. Cutter, 160 Broadway.

St. Marks Pl., No. 17, general internal alteration to four-st'y brick and marble building, peak roof; cost, $3,000; owner, Rev. Jacob Freshman, 25 West Seventh St.; mason, G. H. Williams, 2 West Fourteenth St.

Broadway, s w cor. Twenty-ninth St., internal alterations to galleries of theatre peak tin roof; cost, $5,000; lessee, Geo. C. Brotherton, Philadelphia; architect, Henry J. Dudley, 1360 Broadway.

East Broadway, No. 58, extension and new st'y on two-st'y brick building, flat tin roof; cost, $4,000; lessee, David Cohen, 56 East Broadway; architect, Wm. Graul, 12 Stanton St.

Philadelphia.

BUILDING PERMITS. — *Parrish St.*, cor. Holly St., 2 three-st'y dwells.; Louis C. Smith, owner.

Firth St., w Eighth St., 2 three-st'y dwells.; Thos. Battely, owner.

Firth St., w Eighth St., 2 two-st'y stables; Thos. Battely, owner.

Richmond St., cor. Vienna St., two-st'y dwell.; Thos. McCaulley, contractor.

Chester Ave., cor. Springfield St., 2 three-st'y dwells.; Thos. D. Antrim, owner.

Denmark St., w Front St., 2 two-st'y dwells.; Jno. M. Creane, contractor.

Fernon St., e Nineteenth St., 10 two-st'y dwells.; Thos. Grimman, owner.

South Fifteenth St., No. 730, three-st'y dwell., 16′ x 85′; Robt. Lamona, owner.

Delaware Ave., n South St., ferry-house, 77′ x 86′; Kaignspoint Ferry Co.

Hope St., Nos. 2131 *and* 2133, 2 two-st'y dwells., 17′ x 30′; Wm. Bartholomew, contractor.

Kohl St., w Trenton Ave., two-st'y dwell., 21′ x 28′; Wm. Bartholomew, contractor.

Hartwell St., w Kensington St., 3 two-st'y dwells., 16′ x 45′; Jos. Hamilton, owner.

Wishart St., n s, w Frankford Road, 2 two-st'y dwells., 15′ x 30′; Jos. McNutt, contractor.

Snyder Ave., e Thirteenth St., 2 two-st'y dwells., 16′ x 40′; M. Whelan, contractor.

South Eighth St., No. 754, three-st'y dwell., 17′ x 45′; A. Lagomarsino, owner.

Ann St., No. 153, two-st'y dwell., 14′ x 30′; S. Hein, owner.

Catharine St., e Front St., two-st'y dwell., 15′ x 40′; J. P. McGougal, owner.

Alaska St., w Fifth St., 3 two-st'y dwells., 14′ x 30′; H. Sherlock, contractor.

Jefferson St., near Mercer St., 5 two-st'y dwells., 15′ x 35′; J. D. Caldwell, contractor.

Ludlow St., w Thirty-seventh St., stable and carriage-house; C. W. Budd, contractor.

St. Louis.

BUILDING PERMITS.—Seventy-five permits have been issued since our last report, nineteen of which are for unimportant frame houses. Of the rest, those worth $2,500 and over are as follows:—

S. A. Sharp, two-st'y frame dwell.; cost, $3,000; Alex. M. Kechnine, contractor.

Henry Waushaffe, two-st'y brick dwell.; cost, $3,500; Henry Waushaffe, contractor.

Mrs. Yellitch, two-st'y brick dwell.; cost, $3,200; J. B. Legg, architect; S. L. Jones, contractor.

J. Pichar, two-st'y brick dwell.; cost, $2,500; Wm. Ihlo, contractor.

Chas. F. May, 2 adjacent two-st'y brick dwells.; cost, $5,000; C. F. May, architect; sub-let.

P. B. Fenske, two-st'y brick dwell.; cost, $3,300; E. Janssen, architect; Wm. C. Popp, contractor.

Shattinger, two-st'y brick dwell.; cost, $5,000; E. Janssen, architect; Wm. C. Popp, contractor.

F. Coester, two-st'y brick dwell.; cost, $4,350; E. Janssen, architect; Wm. C. Popp, contractor.

C. Supp, three-and-a-half-st'y store and tenement; cost, $3,000; R. Doerste, contractor.

Alex. Duncan, one-st'y brick addition; cost, $5,000; J. B. Fitzgibbons, contractor.

Mrs. J. D. Edwards, two-st'y brick dwell.; cost, $6,000; J. W. Hertel, architect; Francisco & Farnum, contractors.

H. Niehaus, two-st'y brick store and tenement; cost, $5,000; H. Stauder, contractor.

M. Obermeyer, 2 adjacent two-st'y brick tenements; cost, $4,000; F. Giser, contractor.

G. Wollbrink, 2 adjacent two-st'y brick tenements; cost, $3,200; F. Giser, contractor.

J. Dummeyer, two-st'y brick dwell.; cost, $2,500; J. Dummeyer, contractor.

M. Slattery, 3 adjacent two-st'y brick tenements; cost, $5,000; Sanith, contractor.

Henry Miller, 2 adjacent two-st'y brick tenements; cost, $4,000; P. Riechers, contractor.

Henry Miller, 2 adjacent two-st'y brick tenements; cost, $4,000; P. Riechers, contractor.

George W. Monroe, 2 adjacent two-st'y brick dwells.; cost, $6,000; J. W. Hertel, architect; G. Kunch, contractor.

E. P. Dickson, 2 adjacent two-st'y brick dwells.; cost, $2,500; Dickson, contractor.

THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XVIII. Copyright, 1885, JAMES R. OSGOOD & Co., Boston, Mass. No. 508.

SEPTEMBER 19, 1885.

Entered at the Post-Office at Boston as second-class matter.

CONTENTS.

SUMMARY:—
Result of the Colorado Capitol Competition.— Relics of Dwarf Inhabitants of Yucatan. — The Deposition of the Precious Metals.— A New Theory as to the Deposit of Metallic Ores. — The Action of Water in the Building of Stones. — The Architects take Action in the Matter of a Memorial to General Grant. — Award of the Prix de Rome. 133
STROLLS ABOUT MEXICO. — VII. 135
PRAGUE. — II. 136
THE ILLUSTRATIONS:—
Church of the Epiphany, Winchester, Mass. — Cottage at St. Louis, Mo. — The Cathedral of Mexico. — Design for a Gateway to East Rock Park, New Haven, Conn. — Mission Chapel of Trinity Church, Newark, N. J. — Semi-Detached House at Mt. Auburn, Cincinnati, O. 138
SUGGESTIONS AS TO A COMPETITION FOR A MONUMENT TO GENERAL GRANT. 138
DONATELLO. 138
THE PURIFICATION OF WATER BY MEANS OF IRON ON A LARGE SCALE. 139
MASPERO'S EGYPTIAN RESEARCHES. 141
COMMUNICATIONS:—
Pirated Designs. 141
NOTES AND CLIPPINGS. 142

THE competition for the State Capitol of Colorado has resulted in the choice of a design by Mr. E. E. Myers of Detroit, the architect of the Texas State Capitol, now in process of construction, and of the Capitol of Idaho, at Boisé City. The designs placed next in order were by Messrs. F. E. Edbrooke of Denver, and Mr. Herman B. Seeley. Bids are to be invited at once for the execution of Mr. Myers's design, and if the cost is found to exceed one million dollars his plans will be laid aside, and Mr. Edbrooke's will then be put to the same test. Mr. Myers's estimates have, however, been carefully made, and it is not probable that his design will be superseded. His description of the building, as contained in the book of specifications submitted with the plans, is reproduced in full in the Denver *Tribune-Republican*, and although we disapproved the terms of competition, and felt that the architects who accepted those terms were doing an injury to themselves and their profession, we acknowledge without hesitation that the careful study of this document has increased the respect with which Mr. Myers's Texas design had already taught us to regard him. All through the paper we find evidences of correct taste, appreciation of the requirements of such a structure as a State Capitol, and skill in providing for them, which merit high praise; and as we read we are more and more astonished that a man of so much ability should hold his talents so cheap as to lavish them on such ill-paid and thankless work as the construction of the Colorado Capitol upon the terms proposed. We imagine that Mr. Myers, whom we suppose to be an ambitious and comparatively young man, is now too much elated over his victory to care much about the character or consequences of the struggle; but we believe that before many years he will find himself reflecting with regret upon the part which he has taken in it. Not only will he feel, we think, that he has wasted a considerable part of the best period of his life in work which he could not afford to bring to a perfection worthy of his capacity or advantageous to his reputation, but he will also realize, unless we are much mistaken, that he might, if he had chosen to demand it, have obtained the same remuneration, as well as the same opportunities for studying his work, and the consequent reputation and extended connection, which the best architects of other countries enjoy; and that his hesitation in doing so has not only served to deprive him of rewards which may never again be within his reach, but has, by associating his name with those of the ignorant and unscrupulous horde of "cheap architects," inevitably, although unjustly, deprived him of much of that fair fame which, we may assume, he has tried so hard to deserve.

MRS. ALICE LE PLONGEON writes a curious account, published in the *Scientific American*, of some villages of pygmies discovered by her husband and herself on the eastern coast of Yucatan. It is singular that recent ethnological discoveries in various parts of the world have related to dwarf tribes, and Mrs. Le Plongeon, before describing the Lilliputian towns of Yucatan, reminds us that a number of stone tombs were found a few years ago on the banks of what the printed account calls the River Merrimac, containing adult human skeletons only three feet long, and it is probable that the colonization of Central Africa will show the existence of many tribes of little men. In Mexico, particularly in the south, the dwarfs play a large part in the traditions of the natives, who attribute to them the construction of the ruined buildings found there, and sometimes profess to have seen them, or to have been disturbed by the sound of their hammering at night. The place most frequented by the dwarfs seems to have been Cozumel Island, a low, flat reef, about twenty-four miles in length, off the east coast of Yucatan. On this island still exist the ruins of pygmy cities of considerable importance, with temples built of carefully-hewn stone, the largest of which is fourteen feet long and nine feet high, and has a doorway three feet high and eighteen inches wide; and near by are well-constructed triumphal arches nine feet high. On the neighboring coast are still to be seen the remains of villages, all the houses in which are of stone, but so small that no one larger than an ordinary child of two years could comfortably get into them. There is some reason to suppose that the little race still survives. According to the Indian guide who led Dr. and Mrs. Le Plongeon to the ruins, and who professed to have seen the dwarfs frequently, they are very small and quite shy, appearing only at night, with large hats on their heads, and never speaking to those whom they meet. Many of our readers are old enough to have seen the "Aztec children," the diminutive specimens of a race supposed to be extinct, which were exhibited about the country twenty-five years ago; and it is not impossible that the remnant of tribes which occupied the country long before the Toltec conquest may be found in the valleys of the Cordilleras, just as representatives of nearly all the ancient European races are found still existing in the remoter Alpine valleys.

EVERY suggestion relating to the deposition of metals in veins in the rocks has a certain importance as tending to give greater certainty to the efforts of miners to find these veins. At present, the science of mining, particularly for the precious metals, is almost a lottery. If gold or silver is suspected to exist in a given place, shafts are sunk there, and if veins of metal are cut by the shaft, they are followed up by lateral excavation, until they either become so slender that the metal obtained from them does not pay for the labor of extracting it, or are cut off entirely by a fault in the strata. In many cases the shaft fails to intercept a vein, and laterals must then be run at random until ore is reached, or the attempt is abandoned. The common theories of the formation of metallic veins give the miner little help in searching for them. It is evident enough that they come in some way from the infiltration of liquid or dissolved minerals or metals into fissures in the matrix rock, but the art of finding fissures so occupied, or the sources from which come the precious substances which fill them, is as yet very little developed. In fact, geologists are far from agreed as to whether metallic veins are filled from above, by slow deposition from solutions, or from below, by volcanic action, which forces metallic ores, either melted or dissolved in water or gas, into the available crevices, and leaves them there to solidify. The fact that the interior substance of the earth is far heavier than the solid crust, and must, apparently, consist almost entirely of melted metal, gives some support to the latter theory, but many other circumstances oppose it, and as sea-water is found to contain all the metals in small quantities, the theory that most metallic veins have originated in some way from the separation of the metals from water is perhaps the most popular.

OF late, however, a new theory has been put forward, which seems to combine the plausible features of the other two. This theory, which appears to be due to Professor Sandberger of Wurzburg, and is described in *La Génie Civil* by M. Ernest Chabrand, is known as the Theory of Lateral Secretion, and regards the deposit of metallic ores in veins as the result

of a gradual percolation of water through the matrix rock, which in his opinion, always originally contained the metallic particles, although the process of lixiviation may have been so complete as to wash all trace of them out of the rock itself into the fissures. In certain cases, where the rock, after the formation of the veins, has been subjected to the violent action of water, the whole mass has been ground up and carried away, to be deposited as alluvium somewhere else, but even in such cases the proportion of metallic particles in the alluvium, increasing in particular directions, usually shows the original position of the rock from which it was derived. With the object of ascertaining whether primary rocks carrying metallic veins retained in their substance any trace of the metals forming the veins, Professor Sandberger made careful analyses of different crystalline rocks, and found in them, in small proportion, nearly all the elements concentrated in their veins. The analysis of sedimentary rocks containing metallic veins, which was carried on at the same time with the investigations of Professor Sandberger by M. Dieulafait, Professor of Geology at Marseilles, confirmed this theory, although it introduced some curious observations. In most cases the stratified metal-bearing rocks showed plainly enough the sources from which all their components were derived, but in some instances the metals contained in them must have been dissolved out of the primary veins, and precipitated from the solution by a new agent. The most striking example of this was found in a copper ore from Mansfeld, which occurs disseminated irregularly in a bituminous schist. The schist is full of fossil fishes, and is overlaid by a deposit of limestone, and this by gypsum which is saturated with rock salt. M. Dieulafait considers that in the formation of this deposit the copper was originally dissolved by seawater out of veins in the primary rocks still existing in the neighborhood. Afterwards, perhaps by the retreat of the sea, leaving an isolated lagoon exposed to the sun, the water in which the copper was dissolved began to evaporate, the mixed solution of copper and other minerals becoming more and more concentrated as the water escaped. By and by the fish began to die, and the reaction of their decomposing bodies on the gypsum dissolved in the water set free sulphuretted hydrogen, or some similar compound, which precipitated the copper in the state of sulphide, in which it still remains. The deposits of copper vary in thickness with the proportion of fossil bones under and about them, so that M. Dieulafait's explanation of their formation is apparently the correct one, and the bituminous infiltration of the schist perhaps represents that portion of the decomposed flesh of the fishes which remained after the volatile elements had escaped. Although the paragraph does not continue the description, it is easy to account for the subsequent changes in the salt-water lake. After the water had become so concentrated as to kill the fish, and precipitate the dissolved copper in an insoluble condition, to mix with the organic matter which covered the sandy or clayey bottom of the pool, the other substances dissolved in the water began to crystallize out, as evaporation proceeded, in the order of their solubility. First came the lime, which settled in fine crystals over the sediment at the bottom until it had all separated; then the gypsum, which is far more soluble than carbonate of lime, crystallized out; and when the last vestige of water disappeared from the lake, the salt remained behind.

THE theory that the water existing in the pores of the rocks possesses sufficient activity to dissolve out metals and carry them into the fissures is so reasonable that it is strange that no one should have thought of it before. As architects well know, all stones in a natural condition contain a greater or smaller amount of "quarry sap," which is always saturated with dissolved minerals. Even the hardest granite contains about a pint of water to the cubic foot of stone, and most rocks contain much more, and it is natural that the moisture should acquire, by the combined effect of gravitation and capillary attraction, a movement which in course of time might produce great results. In some granite quarries, where the stone lies in "sheets," as if by imperfect stratification, it is observed that the spaces between the sheets are usually filled with enormous crystals of quartz and felspar, as if the water, soaking through the upper layer of granite, had dissolved the components of the stone, and carried them down to the vacancies between the superimposed masses, to build them up there, by slow evaporation, into the large crystals which such a prolonged and quiet process usually yields; and it is well known that the foot of an exposed trap dyke, like the Hudson River Palisades, is often rich in precious stones, perhaps formed in the same way from material dissolved out of the rock above. The whole subject is full of interest. To take a single example, the city of Philadelphia is built on a clay so rich in gold that the value of the metal contained in the stratum, within the city limits, is estimated to exceed the whole valuation of the city which stands upon it; and as, according to the new theory, all this gold must have been washed from the primary rocks of some place not far distant, it would be worth while, perhaps, to look for that place, and see if any of the precious dross still remains.

AS will be seen by the letter published elsewhere, a number of the best-known architects in New York and other cities have done the public a service by addressing a letter to the committee for the erection of a monument to General Grant, pointing out the best method of securing the most satisfactory design for the costly memorial which it is proposed to erect. It is needless to say that in this matter the wishes of the committee, the public, and all professional architects and artists are entirely in accord. Each of them wishes to see the great American honored by the most beautiful and noble monument that it is within the power of American art to produce; and as architects know better than any one else how good designs for such structures can be, and are procured in other countries, and know also the fatal effect of the mistakes which committees, inexperienced in the ways of professional artists, and ignorant of the necessary conditions of good artistic work, generally make in this country, it is in every way befitting that the representatives of the profession should endeavor to forestall the possibility of another of those grotesque failures which have so conspicuously marked the history of art in this country. That the warning should have come in season is not the least of its merits. As all architects know, lay committees with matters of art in charge are apt to be rather proud of their unaccustomed burden, and to resent any advice as an unwarranted interference with an affair which they feel themselves perfectly competent to manage. The attempt to devise, out of the plenitude of their own wisdom, methods for obtaining designs, generally results in suggesting to such committees, for the first time, vague doubts of their own omniscience; but, rather than humiliate themselves by admitting that any one else knows more of the subject than they do, they promulgate such terms of competition as they have been able to concoct, condoning their rashness with the thought that if everything should not go right they will take pains to rectify any mistakes later. Unfortunately, however, as any architect could tell them, the last opportunity for rectifying mistakes is past when the programme of terms is printed and sent out. These terms form a valid contract between the committee and every person who accepts them by doing any work in accordance with them; and the committee cannot vary, amend or depart from them thenceforth in the smallest degree without making its members individually, as well as the committee in its official capacity, liable to be called upon to pay every person who had taken any trouble in accordance with the original terms a fair price for the time and skill so occupied, as well as compensation for any damage or inconvenience which the change in the stipulations might have caused him. As no committee can face the possibility of this, all thought of improving the terms affecting the designs is, as soon as the risk is explained, at once abandoned, and the only safe course, that of the rigorous fulfilment of the conditions, is necessarily pursued to its final result of ridicule, disgust and disappointment. How many scores of times this familiar drama is enacted every year, only architects know, and, reluctant as all of them are to interfere with other people's duties, it was a wise and patriotic spirit which prompted the professional signers of the letter to endeavor, for once, to prevent its repetition on a conspicuous scale.

THE judgments on the designs for the Prize of Rome have just been published in Paris. M. François André, pupil of M. André, has carried off the grand prize, by means of the best design for a building intended for a medical college. The second prize is awarded to M. Devienne, pupil of Messrs. Coquart and Gerhardt, and the third to M. Louvet, pupil of Messrs. Ginain and Louvet.

STROLLS ABOUT MEXICO.[1]—VII.

THE GRAND PLAZA AND THE CATHEDRAL.

THE great central plaza of Mexico, the focus of the life of the capital, is named the Plaza de la Constitucion. It is also called the Plaza de Armas, military plaza, or parade-ground. The national palace, which with its broad and low façade, occupies one entire side of the square, has in front a large open space, paved with flattish cobble-stones. Here every morning at nine o'clock a roll of drums and blare of bugles is heard as a battalion of the regular army is inspected. Formerly the whole plaza was open, and it must have presented a vacant and barren aspect. The charming garden called the Gócolo, which now occupies the centre, was one of the few good results of Maximilian's reign. The example here set has been followed throughout Mexico; a notable instance of public spirit and love of the beautiful which prevades the people, and of how quickly good seed, once sown, will bear fruit. I have been in no town in the republic not adorned with these pretty plaza gardens, with flowers, shrubbery and fountains, and often some monument or piece of sculpture given by a generous citizen. The contagiousness of the example is the more remarkable from the isolation in which nearly all Mexican centres of population have stood until the recent building of thousands of miles of railway, and even now some of the chief cities have scores of leagues of wilderness between them and kindred civilization.

The interest of the plaza is historic, monumental, picturesque and spectacular. Let one stand here and ponder on the past, and the most romantic associations of the continent will throng the brain. Pictures of a gorgeous aboriginal civilization that, but for its arrest, might have developed in one of the most favored of earth's fair places, a peculiar bloom of its own perfection; of adventure, conquest and heroism; of the building of a powful kingdom under the sway of the viceroys; of stately fortunes, stately titles, and stately palaces founded upon the treasure-fertile mountains of New Spain; of a more than half-century struggle against tyranny, first of monarchy, and then of the church; of the last endeavor to raise the standard of royalty in the new world, and finally, of the powerful wave, bearing the spirit of the nineteenth century, sweeping over the land. From this small spot diverges a grand perspective.

The great architectural feature of the Plaza is the Cathedral, the most prominent building in the city and the largest church edifice on the continent. It is a building which grows upon one, and improves with familiarity. The first impression which it gives is apt to be more of breadth than loftiness; it seems too wide-spreading, and it is not until one passes inside that its truly impressive height is realized. The towers are, indeed, very far apart; a fact which one notes in even a distant view of the city from the southern or northern suburbs. The sense of this defect wears away under the influence of more positive qualities of excellence. That which it has in abundance compensates for that which it lacks. This afore-mentioned fault, which is its greatest, proceeds from its ultra sturdiness. Its proportions are gigantic, with its strikingly broad base it has the expression of a firm, inflexible intent; it has grown up in the spirit of its beginning, and has an indomitable, immovable quality, inheriting, I fancy, something of the personality of its predecessor, the great sacred pyramid temple, the Teocali of the Aztecs. But with all its attributes of permanency it has something in its air, its deportment, so to speak, that suggests adaptability rather than the sternness which might be looked for in keeping with these qualities. And this strikes me as a reflection of the adaptability of the church, which domesticates and moulds itself to the conditions of the locality where it may be.

The concentration of adornment in the façade and about the side portals, and the carrying it up with increasing richness with the towers, a characteristic which, as I have observed in previous articles, contributes largely to the effectiveness of most ecclesiastical architecture in Mexico,—lend themselves in this case with even more than ordinary felicity. The great façade is exceptionally broad, offering a wide field for enrichment. This is utilized to the best advantage, and, the plain bases of the towers being almost cubes, their blank surfaces not carried so high as is customary, opportunity is given for the central ornamentation to diffuse itself as it rises, with a lateral sweep, in the broad series of six double, buttressing scrolls. The adornment, though rich, has a wise self-restraint, and in no part has it the vagueness or confusion so difficult to avoid under such circumstances. The arrangement of details is such as to give each part its proper emphasis and accord it a harmonious place in the scale. The balance, the adjustment of parts to the whole, is admirable. The towers have a simple richness which could hardly be better in its way, as manifested in the lower belfry with the symmetrical group of arched openings in each face, four minor flanking one major; and in the upper belfry with its octagon enclosed in a square. The enormous bell-shaped caps are faulty features. They are oppressive, and they terminate the towers too abruptly. Had their dwarfed circular bases been carried up into third belfries, proportional in height to the two lower, and then allowed to terminate more lightly, it would have added vastly to the beauty of the structure, giving it a grace and aerial character which it now lacks, and atoning, with its increased height, for the too ample breadth.

The sculptured details, the reliefs and the statues, are, like most sculpture in similar positions, difficult to examine closely. It is, however, the best work of the kind in Mexico. Much of it has an individual delicacy and beauty. The group of Faith, Hope, and Charity surmounting the clock has the flowing, symmetrical curves of the best Renaissance.

The Sagrario, or Sacristy, which adjoins the Cathedral on the east, is a type of the worst Rococo, and, with its confused mass of broken, meaningless lines, contrasts, in its unrest, with the chaste dignity of the cathedral. Its good proportions and excellent dome redeem it, however, from badness.

The cathedral was begun in 1573, a church which succeeded the Aztec Teocali in 1530 having been demolished to give place to it. The Aztec temple was dedicated to the war god Mexitili, or Huitzilopóchtli, and was about one hundred and fifty feet high. It was, according to the descriptions of the conquerors, a truncate pyramidal structure, built in successive stories, each of which was reached by a flight of steps whose ascent was gained only by passing around the entire pyramid. There were one hundred and fourteen of these steps. The cathedral was finished in 1667, at a total cost of something like $2,000,000. It is four hundred and twenty-six feet long, two hundred feet wide, and its towers are about two hundred feet high. Like the National Palace, it occupies an entire side of the Plaza. Pictures almost innumerable have been made of it, but I have never seen anything which gives so complete an idea of the magnitude and dignity of the structure as does the photograph which furnished the original for our illustration.

The interior is magnificent and imposing in its proportions. No other church in North America so nearly approaches the vast and spacious effect of the great European cathedrals. Unfortunately, as in several other Mexican cathedrals which I have seen, there is no view of the whole length of the nave, the great organ with an enclosing choir standing in the body of the church near the entrance. The whole length can only be seen in the aisles, and these lack the height of the nave. Another feature, peculiar to Mexican cathedrals, is the lane which leads from the high altar down the centre of the church to the central altar and the choir. This is for the processions, giving them freedom of movement which would be prevented by the crowds which throng the place on great occasions. This lane is bounded by a bronze balustrade so rich in gold and silver that it is said that an offer to replace it with one of equal weight in silver was refused. Its weight is stated to be twenty-six tons. Though the cathedral was despoiled of its most costly treasures at the time of the war of the Reformation, some of its valuables were retained, including this railing. These treasures are said to have amounted to millions, and the high altar was called the richest in the world. A golden statue of the Assumption, ornamented with diamonds, cost $1,090,000, it is averred. A beautiful Murillo, once in the cathedral, is now in possession of the Archbishop. The elaborate carving and heavy gilding of the altars and the choir represent enormous outlay. The gilding is apparently unalloyed gold, intensely yellow, and correspondingly gorgeous in effect.

The cathedral seems like an old friend which I have summered and wintered—if the expression may be used concerning that around which the seasons vary so slightly. I have seen it under so many conditions that I feel on intimate terms with it. It was seldom that my daily walks did not take me past its portals. An effective approach is that through the great avenue of the Cinco de Mayo, the Fifth of May, named in honor of the battle of Puebla, in which the Mexicans defeated the French. This is a new street, planned by Maximilian, but only completed in 1883. In character it resembles the Avenue de l'Opéra in Paris, the columned façade of the great Teatro Nacional closing the western vista, and the west tower of the cathedral rising at the other end. I remember one magnificent spectacle when standing about midway of the avenue one evening at the time of the famous red sunsets. Above the theatre roof there rose in the west the dark mass of the mountains of La Cruz in sharpest silhouette against a carmine glow like that of a conflagration. Opposite, the great tower reflected the radiance, its whitish mass steeped in the tenderest roseate tint against the purplish blue of the eastern sky when night had fully come.

Another memorable spectacle was that of September 16, when the avenue was dedicated, as a feature of the celebration of the national independence day. The avenue was garlanded with evergreen, festooned from poles set along the curbs, and at night these garlands were thickly hung with paper lanterns. Rows of tapers glittered along the ledges of the cathedral front, sides and towers, and within the cavernous recesses of the belfries green and red Bengal lights alternated, thus in combination with the steady white light that bathed the exterior forming the national colors. These lights changed rapidly from tower to tower and belfry to belfry in varied succession, and against them the great bells that occupied the openings stood in dusky outlines. It was a night like those which we frequently also have at the North in mid-September, when it seems as if, over the world, there prevailed a truce between summer and winter. The rainy season was nearly over and the night was soft and mild as seldom it is at the altitude of Mexico. The air was absolutely still.

[1] Continued from page 78, No. 503.

The plaza was filled with a sea of thousands and thousands of people. There was no disorder, no jostling, no unseemliness. Here and there in this sea were little islands of vacancy, occupied by pitch-pine fires over which Indians were cooking savory concoctions and selling them to hungry peasants, or where little mountains of peanuts—the favorite edible of the Mexican holiday crowd—were for sale. At the four corners of the garden bouquets of fireworks were incessantly corruscating and flocks of rockets were taking their flight aloft. Around the paths of the Zócolo, listening to the music, promenaded throngs of the gentry, to whom the peasantry tacitly yielded precedence, nor ventured to assert their democratic privileges, the natural feeling of deference to social superiors preventing them more than would the strictest rule. Above, the smoke hung motionless in the still air, ruddy with the reflected glow of the fires and diffusing the brilliance of the myriad lights in an atmosphere of enchantment.

On moonlight nights the cathedral gained a new beauty, the lines being softened and the heavy masses lifted into a spirituality which the edifice lacks under the prosaic daylight. Under such conditions the Sagrario is all beautiful; its charm of proportion speaking for its full value, while the unmeaning lines and confused shapes of its ornamentation are transmuted to an indefinite frostwork of silver, deliciously stippled with irregular shadows. I remember a picturesque sight one New Year's eve when crowds of Indians were sitting around in the cathedral yard waiting for the stroke of midnight and chanting their monotonous songs in low tones while the full moon poured its light from directly overhead.

A pleasant garden occupies what is called the *átrio* of the cathedral, in front and on the west side. The turf is perpetually soft and green and flowers are always blooming. Among the plants are a great number of the striking cactus-forms peculiar to Mexico. Here, too, is an engine-house where the water is pumped for the hose with which the garden is sprinkled during the dry season, the old-fashioned aqueduct system preventing the distribution of water over the city under pressure as yet, although there is a project for a new supply which may advantageously be brought from the surrounding mountains. This engine-house is concealed beneath a pile of lava, over which are trained vines and cactus: when the engine is running the smoke from the cone completes the resemblance to a miniature volcano. The flower-market, occupying a large iron pavilion near the west entrance of the cathedral is one of the morning sights of the city, with bouquets of great beauty and cheapness sold by Indians from the neighboring villages. At the corner of the garden is a striking group of Aztec relics, fragments of the Teocali, excavated on the spot. An architect would note with some interest the accuracy with which the stone of these relics is hewn, the trueness of the lines, the grace of the curves, and the form of the capitals in these fragments, among which are some grotesque images, including a toad with a human head in its mouth, and a huge coiled serpent. Near by, at the base of the west tower, is the famous Aztec "calendar stone," the subject of many learned dissertations, in the presence of which one may ponder whence was derived the accurate astronomical knowledge which enabled the Aztecs to calculate their calendar with the same exactness which we possess today, and which made the conquerors marvel how it was that in that respect the despised barbarians were far ahead of contemporary Europe. The stone was placed in its present position in 1790 by request of the commission of the cathedral. It is eleven feet eight inches in diameter, and is said to weigh twenty-six tons. It was quarried in the suburb of Coyoacan whence it was brought to the city in 1479 with great festivities, in the reign of Axayacatl. The stone is basalt.

A tasteless feature of the *átrio* garden, almost vieing with the Cogswell fountains of Boston and elsewhere in badness is a fountain presented to the city by the proprietors of the American circus, which is one of the permanent features of the amusements of the capital, and whose ugly structure disfigures the neighborhood of the east side of the cathedral, to the especial prejudice of the beautiful monument to the eminent cosmographer, Enrico Martinez, the work of the sculptor Noreña.

The cathedral leans perceptibly to the westward. There are few buildings of great size in Mexico which are not out of plumb, notably so being the Church of La Profesa, the National Library, which was formerly the Church of San Augustin, and the Minería, or school of mines. This is owing to the nature of the foundation. Mexico has sometimes erroneously been said to be built upon piles, like Venice. Although the soil is seemingly marshy, and so porous as to admit the waters of the adjacent Lake Téxcoco, which underlie the city, it nevertheless supports some of the heaviest buildings in Mexico, which would sink out of sight in a really boggy ground.

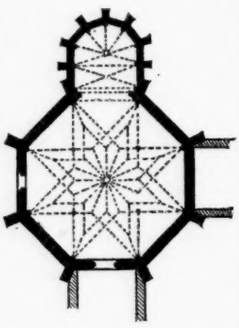
Above the clock, between the towers, there rises a tall staff, from which on holidays there floats the standard of the Republic, green, white and red, with the Aztec coat of arms, emblem of the dominance of the government over that which formerly dominated it. The government now owns the cathedral and allows the Church to use it. This reminds me of an incident of the period when the Liberals had gained the ascendency in the government, and the Church had not learned its place under the new order of things. I was at the theatre one evening with a Mexican friend, when a young man in one of the boxes was pointed out to me as Gustavo Adolofo Baz, a rising poet and dramatist. "His name indicates, I should say, that his parents were hardly devout children of the Church," I remarked.

"You are right," said my friend. "Just after the Reform his father was governor of the Federal district. It was the custom, on Ash Wednesday, for the governor to go to the cathedral and receive the key to the place where were kept the vessels for the holy sacrament, the bishop hanging it around his neck by a golden chain, and the governor keeping it until the end of the week. In accordance with this custom Governor Baz went to the cathedral at the regular time, but the bishop refused to give him the key, saying that he would not get it back again if he gave it to him. The Governor went away, saying that he would see about that. He shortly returned at the head of a body of troops, before whom he rode on horseback into the cathedral door, through the multitude which thronged the place, directly up to the high altar where he seized the bishop and all the priests in the midst of their sacred functions, packed them into the diligences which he had had drawn up in waiting at the door, and sent them down to Vera Cruz where orders were given that they should be sent to Europe by the first steamer that left the port."

That was a subject for an operatic scene worthy of Meyerbeer!

Sylvester Baxter.

PRAGUE.[1]—II.



Plan of the Carlshof Church, Prague.

On the left bank of the Moldau, scarce a trace of mediæval Prague remains save the bridge towers and various structures on top of the Hradschin. The whole *Klein-Seite* has been more than once swept away and rebuilt, and now its aspect is entirely Renaissance and Baroque. What chiefly strikes us is the immense number of huge private palaces. They tell a true tale of the pomp and wealth of Prague and its nobility during the later seventeenth and the earlier eighteenth centuries; that is, between the close of the religious wars and the opening of the great struggle between Austria and Prussia. But the Bohemian nobility now makes its chief home in Vienna, and almost all the palaces are shut up and disused, though not as yet very often turned to other purposes. Yet Prague must by no means be conceived of as one of those towns, too frequent in Germany, for instance, which are mere half-dead survivals of an earlier epoch; on the contrary it strikes us as being quite peculiarly alive. It is one of the busiest and most cheerful looking of cities in its modern burgher phase; and one of the richest, too, according to the evidence of its recent buildings. We see very plainly that it is still the capital of a prosperous nation, though no longer the home of court and aristocracy.

The many palaces give the *Klein-Seite* an especially strong southern accent which is enhanced, furthermore, by the frequency in other structures of arcaded lower stories. The great deep arches round themselves, the massive piers stretch out their toes and brace their burden on the sloping streets and squares, and the shadows and the loungers lie under and around them in a truly Italian fashion. Even the swarming soldiery look southern; are slip-shod and unworkmanlike in appearance as compared with their northern rivals, but much more graceful and picturesque and, apparently, much more at leisure to display their qualities.

We may make a short cut to the top of the Hradschin if we will. But as it must be made on foot and by steps two hundred and three. It is as well perhaps to choose the more circuitous route and approach the *Burg* from behind, through westward spreading streets and squares. We find it to be an immense agglomeration of palaces, running out into a medley of narrow streets and churches and fortifications, everywhere built up to the very verge of the cliff, and on the side remote from the town, looking over into the wide tree-planted hollow which was once the moat.

The outermost western wings of the palace, enclosing three sides of a great court-yard, were built by Scamozzi in a Doric-Renaissance fashion in 1614. There are two other large court-yards and endless other wings, some earlier, some later; the latest dating from the time of Maria Theresa. Two immense state apartments were re-decorated by Ferstel in 1868 in a pompous, white-and-gold, orthodoxly regal, late-Renaissance way; and we may at least say of them that they are well fitted for their purpose. But we are more interested in the mutilated wing that was built about 1550; that is, just at the moment when Gothic and Renaissance modes were struggling together in this part of the world. Nor could the struggle be more apparent to the eye. The greatly defaced and partly concealed exterior is thoroughly Renaissance in character with large square windows divided by pilaster-mullions and some still lingering traces of delicate ornamentation; but the interior of the chief apartment (where, we are told, not only festivities of pedestrians but also tournaments on horseback were accommodated) is Gothic in all save these windows, having a fine vaulted ceiling ribbed with the bough-like or "stump" tracery characteristic of the expiring phase of German pointed-work. I have never seen anything so hideous as its present "decoration." Not even the crudest colors in the most finikin modern patterns, or the most glaring pictures of the current restorer could equal this effort (which was made, I should guess, some fifty years ago) with its

[1] Continued from page 124, No. 507.

design of simulated tracery executed on an enormous scale in gray and black upon a whitewash background. From this piece of ruined stateliness we seek the staircase which leads up to the famous *Kanzlei-Zimmer*, a square, large but low room which still fortunately preserves much the same look it must have had when the imperial governors were pitched from one of its windows in 1618, and the signal then and there and thereby given for the Thirty Years' War. Not only to the historic mind but to the tourist eye as well is this the most satisfactory corner of the *Burg:* long may the hand of the restorer be averted from it! And the outlook it affords from the very verge and corner of the Hradschin is so bewilderingly lovely that we cannot but sigh to think of the three gentlemen who lost their sense of it in their (not fatal) tumble into the ditch some fifty feet below. This practical and positive, yet picturesque and symbolic way of disposing of one's enemies seems to have been a local fashion; — there is more than one other window in Prague of which a similar tale is told.

The oldest of several towers which survive from the Hradschin fortifications is the former dungeon, called the "Black Tower," a plain, square construction of the thirteenth century. Near it we are shown the spot which was the official slaughtering-place for criminals of noble birth — a phrase which condenses into portable shape a great deal of characteristic local history. The other towers are now divided into dwellings for the poorer classes. There are also convents and private palaces and all sorts and kinds of other structures crammed together on the Hradschin. Among its churches the most important after the cathedral is St. George's. It is a much mutilated but still unrestored and therefore still decipherable small Romanesque basilica partly of the eleventh, they say, but chiefly of the twelfth century. Its towers, which stand near the east end and form the transepts, are simple enough and look time-worn enough to deserve their date. Inside we find a nave now vaulted but once flat-roofed, and galleried aisles, the vaulting of which is original. The supports are alternately piers and columns, with the simplest cube capitals. The choir is raised so that one ascends as many steps to reach it as one descends to reach the crypt, where the workmanship is of a still simpler and ruder sort. There are several very early tombs in the church but they have been restored out of all knowledge, and the entire church is threatened with a similar fate.

The cathedral, as I have said, is but a fragment. The choir is finished westwards by a temporary wall, and forms in itself so spacious a church that one imagines there can be no actual, devotional need for the completing processes now under way beyond it. The designer of the church was a Frenchman, Matthew of Arras, whom Charles the Fourth brought home with him from Avignon. But most of the work was done under his successor, a Suabian, Peter von Gmünd, called Peter Parler — a name pleasantly suggestive of a familiar friend of our trans-Atlantic infancy. And the architecture plainly corroborates what history says: the design of the choir with its beautiful polygonal apse, and with aisles and chapels following the circuit, could not be called aught else but French; but German taste and a later period are clearly shown in the outline of the supports, in the absence of capitals and in the rather flat vaulting with its net-like design. The interior has been partially restored, but not very badly, and is full of interesting monuments. The most conspicuous is the enormous sarcophagus of solid silver, with life-size angels and endless massive accessories which was a Rococo tribute to St. John Nepomuc. More delightful, however, is the Chapel of St. Wenzel, an early local ruler, which is curiously lined with semi-precious stones, set in a rough non-mechanical way. Their bright, yet mellow tints — purple, and green, and red, and yellow — form a rather barbaric but still delightfully decorative effect. Higher up on the wall are the remains of early frescoes, with figures of more than half life-size, that once must have been most exquisite, and are even now enjoyable. They are given a Bohemian authorship, but look as though an Italian hand had wrought them. Altogether the interior of this chapel which is more properly an isolated room, is an admirable subject for the water-color painter, whom I have already advised to bend his steps towards Prague.

The new work on the cathedral — the work of building the great five-aisled nave — is pretty well advanced though it will be some time yet ere the choir wall can be removed, and new and old be joined together. The tower also is to be finished and matched with another.

Peter Parler's fame rests on much wider and firmer grounds than his partial execution of the Frenchman's design for this cathedral. His hand is to be traced in many of Bohemia's finest structures, and where not the hand itself then at all events its influence. To him must largely be attributed the very French character of much Bohemian work, and to him also constant eccentricities or audacities of structure which prove him to have had a very marked architectural individuality. We can see as much without leaving the circuit of the capital where he was especially active. For his is the magnificent bridge — sixteen arches, with a total length of sixteen hundred and twenty feet — still in a singularly unmodified condition; his are several interesting churches, now mostly desecrated or restored; and his above all is the Carlshof Church, which I should call the most interesting thing in Prague.

The Carlshof is an ancient convent, away off up the river in the *Neu-Stadt*, not far from the Wyscherad hill. From the parapet of its garden we see the town from the opposite point of view to that which we held on the Hradschin, and from such a distant point that the great *Burg* with its cathedral seems but a spot against the sky. Immediately below us are steeply sloping vineyards, and in the near middle distance a long succession of mutilated Gothic churches which we may be content to see from here as most of them are now disused and access to their interiors is very difficult. The Carlshof is now an almshouse, and one registers a vow that if ever brought to pauperism one will at least earn money enough to come to Prague and be a pauper here. It is not only the garden and the view, but the paupers' actual quarters which make us envious; long, wide low-studded rooms built for monastic uses in the last century, and to-day as clean and pure and comfortable looking and as prodigal of their shadowy spaciousness as even the most querulous of ancient invalids could ask.

But all architectural interest centres in Peter Parler's church. One wonders a little how he ever thought of building it, and wonders more how he ever put his thought into stone. For it is not a church of any ordinary pattern, but a great octagon, rather more than twenty-five metres in diameter, and vaulted in a clear sweep, and in the most beautiful star-like design, to almost exactly the same height above the floor. The boldness of the dome is all the more astonishing when one notes how slight is the buttressing, and how far from massive are the walls themselves. A section of the church would show the vault to be somewhat flat, as we might expect from the date of its completion — 1377. But it does not strike the eye as being in the least too flat, differing in this respect from most German structures of the time, including Peter's own cathedral, which was finished some eight years later. Unless I am greatly mistaken there is no dome of the kind in Europe so wide as this. It is certainly a masterpiece of construction, and no less a masterpiece of beauty. And it would be such even without the splendid color which adds a final charm. Here for once we may actually see and not imagine how superb a great polychromatic pointed vault may be. The decoration dates, I believe (though I cannot just now make sure on indisputable grounds) from about 1500, and seems to have been but little touched by later vandalism.[1] The general effect is of red and gold in sombre yet brilliant richness. The red has been the background for figure-subjects, distinct yet broken traces of which may still be followed; and the gold comes in the shape of broad *repoussé* leaves of metal which are laid along the vaulting ribs as though branching from them on either hand. One wonders whether the effect in its original freshness could have been at all too loud and bright; decides most probably *not*, and yet is quite content to see the dome as it is to-day. For it does not look time-worn, only time-mellowed; not faded or scarred, only subdued. It still glows and gleams and vibrates, and is altogether the most enchanting thing of the kind that one need hope to see.

Unfortunately the walls are not in so good a condition as is the vault. The long, narrow single lights which are set far above the floor have lost almost all their glass; under them rises a row of great tawdry Baroque altars; and the wall-spaces that these leave visible were disfigured at some uncertain date with very dreadful nondescript patternings. But the hand of time has worked valiantly here while working tenderly above, and the gaudiness and tawdriness have been faded into a comparatively inoffensive condition. I should note, of course, that a polygonal apse opens from one side of the octagon — else even bold Peter Parler could hardly have made a church of it; indeed is something more than an apse: it is two parallel bays of a choir with a *four*-sided polyglon beyond; an arrangement which brings a pier and not a window in the centre, and gives still another proof that Peter was nothing if not unconventional. Yet the design is very lovely, its delicate slenderness contrasting effectively with the wide, stately sweep of the great octagon itself. But in the choir and apse, alas! the restorer has lately been at work; has covered the walls and vaulting with a little diaper of crudest tints; has set up a great light-wood reredos of that hard, dry elaboration which even among moderns only a German seems able to produce; and has framed in this the loudest and most garish of paintings. We turn with an almost affectionate eye to the softened Baroque intrusions in the body of the church, and hear with consternation that they are soon to disappear. For within a few months the restorer is to complete his work; is to purge the structure of all incongruous additions, and then to add his own. All, the custodian says, is to be very thoroughly done, and the result will be eminently "*stylvoll;*" which being interpreted, means: will be just like the choir. "But the ceiling of course will not be restored?" "Oh no, of course not; we know how beautiful it is; it will only be freshened up a bit, and retouched where necessary." And, in short, he who would see one of the finest and most individual things in Europe had better make no long delay. The Baroque trappings and the general forlornness of the lower walls will not greatly afflict him, I say, for the structure is intact, and the great graceful vault sheds glory enough to cover all inharmonious details of a time-softened kind, and to blend the whole interior into a general effect of gorgeous gloom. But modern discords are not so easily obscured; — and does not danger threaten even the dome itself?

[1] I cannot even make sure of the exact dimensions of the church. The custodian says the diameter of the vault is 25 metres, or a fraction over 81 English feet; a local handbook (which I found to be untrustworthy on other points) says 23.7 metres, or 72.2 English feet; and Lübke says 75 feet, which means more than the same measure in English, whether we interpret him to reckon with the Leyden foot, commonly used in North Germany, or with the local Prague foot. In any case the vault is considerably wider than the oft-described one of similar design on the octagonal chapel at Bathala in Portugal, which is buttressed, furthermore, by its encircling chapels. And the famous octagon in Ely Cathedral measures but 65½ feet in the clear. This last fact I note, of course, not as comparing structures essentially dissimilar, but merely to give an idea of the size of the Carlshof construction. The Ely octagon is vaulted with wood. There is, I am told, an excellent monograph on the Carlshof church, but alas! in the Bohemian language.

Fame is unjust at times. When so many far inferior things are so loudly trumpeted, why does the world not know more about this pearl among structures, this jewel bit of decoration? Of course to the architectural world it is not unknown; but it deserves a popular fame as well.

Whether the exterior of the church is to be rejuvenated or not, I do not know, nor what was its original state. It was ruined long ago and the present low dome which seems to follow very closely the curve of the vault within, was added late in the last century. Other external feature there is none save the plain outline of the apse, and the building might well be passed unnoted amid the myriad monuments of Prague. The interior was carefully measured and drawn last year by some English architects officially sent out for the purpose; but by whom or with what exact object I could not learn. Our *cicerone* averred that they came at the express personal command of Queen Victoria. The act would certainly have been fitting, for it is a royal piece of beauty.

A recent illustration in these pages having shown a Flemish church which contains a copy of the Holy Sepulchre at Jerusalem, I will add that such reproductions or attempts at reproduction are not uncommon in Europe; and that there is one connected with this very church. We enter it through a low pressure in total darkness, and by the light of flickering kerosene are shown a tiny, mouldy dismal cavern, its various niches adorned with the most infantile frescoed histories, and filled with wax-work representations of sacred incidents. How good a claim it has to structural accuracy I cannot say.

M. G. van Rensselaer.

THE ILLUSTRATIONS.

[*Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.*]

CHURCH OF THE EPIPHANY, WINCHESTER, MASS. MESSRS. RAND & TAYLOR, ARCHITECTS, BOSTON, MASS.

THIS is a small parish church recently completed at a cost of about $4,500. The exterior is shingled, and stained with Cabot's oil of creosote in harmony with the rustic stone chimney and the picturesque surroundings. The interior is finished in cypress. The roof is supported by semicircular trusses built up of several thicknesses of boards bent into position,—a mode of treatment which gives the interior a singularly broad and airy effect. The seating capacity is about 200, easily increased to 300 by throwing up the large doors into the guild-room.

COTTAGE FOR F. W. OLIVER, ESQ., ST. LOUIS, MO. MESSRS. RAMSEY & SWASEY, ARCHITECTS, ST. LOUIS, MO.

THE first story will be of St. Louis pressed-brick, the second story of red slate and the roofs of black. The house is thirty-four feet by forty feet, and will cost about $6,000.

THE CATHEDRAL OF MEXICO.

FOR description of this building which is reproduced from a photograph by W. H. Jackson & Co., of Denver, Colo., see the article "Strolls about Mexico" elsewhere in this issue.

DESIGN FOR A GATEWAY TO EAST ROCK PARK, NEW HAVEN, CONN., BY MR. A. H. HOWE, JR., NEW HAVEN, CONN.

MISSION CHAPEL OF TRINITY CHURCH, NEWARK, N. J. MR. C. A. GIFFORD, ARCHITECT, NEWARK, N. J.

THIS chapel was built about two years ago at a cost of $2,500.

SEMI-DETACHED HOUSE, MT. AUBURN, CINCINNATI, O. MR. BRUCE PRICE, ARCHITECT, NEW YORK, N. Y.

SUGGESTIONS AS TO A COMPETITION FOR A MONUMENT TO GENERAL GRANT.

NEW YORK, September 10, 1885.

TO THE CHAIRMAN OF THE COMMITTEE FOR THE ERECTION OF A MONUMENT TO GENERAL GRANT: —

Sir,—It being manifest that the design for the monument to the late illustrious General, Ulysses S. Grant, should represent the best architectural talent the country can produce, we the undersigned architects do respectfully suggest:

1. That there should be a competition for the same.
2. That the American Institute of Architects be invited by the Chairman of the Committee to send to him the names of ten members of the profession in this country, whom it considers best qualified to make an appropriate design for the monument.
3. That the ten architects, so selected, be invited to enter into a competition for the monument with the understanding that the programme for the competition shall be prepared by a Committee of not less than three of their number, and that each of the ten be paid a certain sum of money, say, $1,000.
4. That the competition shall be open to every architect desirous of sending in a study.
5. That the order of merit of the whole number of designs submitted, be voted on by each member of a Committee of twenty, composed of ten to be nominated by the Monument Committee, and of the ten selected architects, and that the design receiving the largest number of votes, shall be accounted first, and its author employed to carry out the work.
6. That prizes of the value of say $1,000 and $500 be awarded to the best designs prepared by architects not specially invited to compete.

Albany, N. Y.
ROBERT W. GIBSON.
Boston, Mass.
VAN BRUNT & HOWE,
ARTHUR H. DODD,
PEABODY & STEARNS.
Chicago, Ill.
W. W. BOYINGTON,
BURNHAM & ROOT,
W. L. B. JENNEY.
Hartford, Conn.
GEORGE KELLER.
New York.
CHARLES W. CLINTON,
JAMES M. FARNSWORTH,
H. EDWARDS-FICKEN,
H. J. HARDENBERGH,
GEORGE E. HARNEY,
New York,
FRANCIS H. KIMBALL,
CARL PFEIFFER,
WILLIAM A. POTTER,
R. H. ROBERTSON,
ROSSITER & WRIGHT,
W. WHEELER SMITH,
RICHARD M. UPJOHN,
VAUX & RADFORD,
JAMES E. WARE,
WESTON & TUCKERMAN,
FREDERICK C. WITHERS.
Philadelphia, Pa.
CHARLES M. BURNS,
T. P. CHANDLER, JR.
Providence, R. I.
STONE & CARPENTER.
Washington, D. C.
WILLIAM M. POINDEXTER.

DONATELLO.

THIS life of Donatello is the first of a series of "*Lives of Celebrated Artists*," of all periods and countries, published under the direction of the learned author, M. Müntz. It comprises one hundred and fourteen pages, and is illustrated by forty-eight engravings of rather unequal merit; the paper is good, the printing clear, the cover, limp parchment, decorated with a border of Renaissance design in the best possible taste, the whole, large octavo, costing five francs—a marvel of cheapness. Such a book on such a subject, must always be welcome; but when the author is so able a writer as M. Müntz, it is naturally more so.

M. Müntz justly points out in his preface, that whereas the fame of Michael Angelo has been acknowledged for the last three hundred years, it remained for this generation to recognize and to appreciate fully the genius of Donatello. The author is as enthusiastic an admirer of the man as of the artist. He calls him the "most modest, the most disinterested, the most devoted of men;" and cites the words of Benvenuto Cellini in his praise—"the great Donatello and the marvellous Michael Angelo are the two greatest men who have existed from ancient times up to our own days."

Donato, or Donatello, was born at Florence between the years 1382-87. His father Niccolo di Belto Bardi, was, besides being a wool-stapler, a politician, and like all the Italians of that day, he threw all his native enthusiasm into the cause he advocated; exiled from his native city after the revolt of the "Ciompi," he fled to Pisa. There he could not rest, and quarreling with a compatriot of the opposite side, he had the misfortune to kill him, and was obliged to take refuge at Lucca. Soon after, accused of being an accomplice of the Conte de Durazzo, he was sentenced to be attached to an ass's tail and beheaded. All his goods were confiscated, and his children treated as rebels; but in the November of the same year (1380), he was declared innocent and re-instated in his rights. The young Donatello had no taste for politics, but his spirit was revolutionary, and he inherited the excitable nature of his father. Like most of his compatriots, he began life in the workshop of a silver-smith. Vasari alludes to a work executed by him under the painter Lorenzo di Bicci (1350–1427), and as he was enrolled in the guild of St. Luke, it is quite possible that he may have studied painting. But Vasari must be in error when he stated that Donatello was one of the competitors for the doors of the Baptistery, for he was only fifteen years old at the time, and it is not probable that a youth of that age would have been allowed to enter the lists with such men as Quercia, Brunellesco and Ghiberti. But the result of the competition affected Donatello indirectly; for when Brunellesco, unsuccessful and dissatisfied with his work, determined to go to Rome to complete his studies, Donatello resolved to accompany him. This was the turning point in the life of Donatello, and the commencement of the Renaissance movement; the rigidity of the Middle Ages was thrown off (and with it, it must be confessed, a certain amount of religious sentiment) and the study of Nature and of the antique revived. Such a realist was Donatello at this period, that his friend Brunellesco accused him of making the Christ which he carved for the Church of Santa Croce, "a mere peasant." Donatello replied, that it was easy to criticise, but not so easy

[1] "*Donatello*," by Eugène Müntz, conservateur de l'Ecole des Beaux-Arts, Paris. I. Rouam, 20 cité d'Antin.

to do the work. "Take the wood, and carve one thyself," said he. Brunellesco took him at his word, and spent many months over the crucifix, sparing neither time nor trouble, and when it was finished, he invited his friend to see it. Donatello entering the house with his apron full of eggs, cheese, vegetables and other things for their breakfast, was so astonished at its beauty that he threw up his hands, and dropped all the contents of his apron on the ground. The two crucifixes are still to be seen in the churches of Santa Croce and Santa Maria Novella. If Donatello's fault at this period of his life was excessive realism, he could not have done better than go to Rome. The eternal city was at that time a virgin forest of antiquities; statues were discovered only to be mutilated; buildings were ruined; treasures abounded on every side for the few who knew their value. So assiduous were the two friends in their search for artistic remains, that they were known as "*Quelli del tesoro.*" Donatello's enthusiasm was for sculptures, Brunellesco's for the architectural fragments; a difference of tastes which cemented their friendship, and enabled them later on to work together with such success in the cathedral, in the Chapel of the Pazzi and the Church of San Lorenzo. About 1405, Donatello returned to Florence, and was working with Ghiberti, with Michelozzo and Paolo Uccello. The "Annunciation," executed in 1406 for the Cavalcanti Chapel at Santa Croce, is one of the most beautiful of Donatello's bas-reliefs. The attitude of the angel is graceful in the extreme and full of religious sentiment; but the figure of the Blessed Virgin is marred by a twist in the lower part of the body. Above the entablature which is supported by two columns, are little child-genii holding festoons, the first example of what afterwards became a common conceit of the Renaissance sculptures; but it was the revival of the statue which was Donatello's chief work. In the Middle Ages, sculpture was used for the same purpose as the book in later times. When the people were unable to read, the placing of scenes from the Gospel or ideal subjects such as the Last Judgment as bas-reliefs over portals and on façades, was necessary for their education. But when learning became common, men could dispense with pictures in stone and wood, and turn their attention to work, the merit of which consisted in beauty of form, as Victor Hugo says "*Ceci tuera cela.*" Hence the revival of single figures and groups in *ronde bosse* such as Davids, Judiths, Saints and the like, which took the place of the Aphrodites, Athenes and Dionysi of old. Donatello worked in all materials; marble, stone, stucco, bronze, terra-cotta and "*stiacciato*," which is a kind of relief so imperceptible that it seems rather to be drawn or incised upon the stone, than chiselled.

M. Müntz is of opinion that Michael Angelo's "Moses" was inspired by Donatello's "St. John the Evangelist" in the Florence cathedral; and certainly a comparison between the two gives force to the assertion. The arms are in different position, and the heads are turned differently, and yet there is a similarity in the general effect that cannot be a mere coincidence. "*Nous ne pousserons pas l'irrévérence jusqu'à prononcer le mot de plagiat. Mais la critique manquerait à tous ses devoirs en ne revendiquant pas les droits de Donatello et en ne proclamant pas en sa faveur la priorité de l'invention.*" There are M. Müntz's words, and it is pleasant to find so great an authority giving utterance to an idea which has probably troubled many lesser minds.

The St. George of the Church of Or'San Michele is known to every one; but the bas-relief which was formerly underneath it, and is now on the other side of the church is often passed by unnoticed; and yet so beautiful is it, so harmonious in its lines, so exquisitely modelled, that even Raphael in his picture in the Hermitage did not disdain to copy it. In these works Donatello soared above the mere realist, which some of his earlier work, such as the "David" (Il Zuccone) proved him to be.

From 1425–33, Donatello associated himself with the architect Michelozzo, and to their united efforts we owe the tombs of Pope John XXIII in the Baptistery at Florence, of Cardinal Braucacci in the Church of Sant' Angelo a Nilo, Naples, and of Giovanni de Medici in San Lorenzo, and the exterior pulpit[1] (*pulpito della cintola*) of the Cathedral of Prato. In the latter work we find the first of those compositions of dancing children for which Donatello became so famous. During the Middle Ages children had been represented as pigmy men, or ill-formed, attenuated, stiff and boneless creatures; but Donatello re-introduced the natural, round, fat children of the antique sculptors; dancing, playing tambourines, singing, laughing, with wings it is true, but none the less more like Bacchantes or Genii than angels. Those now in the Bargello, which were designed for the organ-tribune of the cathedral, cannot be judged properly in their present position. Intended to be seen from below and at a distance, they are now, through the wisdom of the authorities, placed upon the ground, and thus looked down upon by the spectator.

In 1432–33 Donatello paid another visit to Rome, and to the inspiration of the antique, we owe the bronze statues of "Cupid" and "David" in the Bargello. The latter is one of his first entirely nude figures, and no doubt the easy pose and exquisite modelling of the limbs were the outcome of classic studies, added to his innate love of Nature. There is a pertness in this little David placing his foot upon Goliath's head, which is the very essence of boyhood; a self-satisfied expression which is only seen upon the faces of the extremely young when they feel that they have done an exceptionally clever deed. It was also about this time that the gates for San Lorenzo were executed. They consist of twenty panels, and although each division contains but two figures, they are all in different attitudes.

From 1443–53 Donatello was engaged upon the famous equestrian statue of Gattamelata at Padua, a work only second to the Colleone by Verrochio at Venice, and it is probable that the fine bronze horse's head in the Naples Museum is of the same period; if not a study for the statue itself. In the bas-relief of the life of St. Anthony, Donatello escaped the errors of Ghiberti, in treating sculpture as painting with effects of perspective, and of putting several subjects into one panel. Donatello was never married, and his life seems to have been devoted to his mother and his sister, with whom he lived, and his art. Earning little, he was always poor, often in debt; but he seems to have invariably made provision for paying his creditors. Simple in his dress as in his living, he is recorded to have returned a magnificent suit to his patron Cosmo de Medici, as being "too fine:" "*gli pareva essere delicato.*" And yet he had the true artistic pride, for upon one occasion, rather than receive what he considered inadequate payment for a bronze bust ordered by a Genoese tradesman, he threw it into the street where it was broken to pieces. He died in 1466, aged eighty-four, and was buried in San Lorenzo, near the tomb of his friend Cosmo de Medici.

That Donatello influenced to an enormous degree the sculptors of the Renaissance there is no doubt. Vasari relates that Michael Angelo studied his work with such success that one of his bas-reliefs of the Madonna was taken for a work of Donatello. Amongst his pupils were Nanni di Banco, le Rossa, Giovanni di Pisa, Agostino di Duccio, Bertoldo, Vellano and Andrea Riccio. Verrochio expressed such admiration for him, that when dying, he requested to have a crucifix carved by Donatello placed in his hands. That Donatello studied the antique, there is no doubt; but he seems to have infused life into his marble, and warmed it by the breath of humanity. His work may not be so classically correct, but it is more human. And yet, on the other hand it possesses the sentiment that later work has lost: it unites as it were the feeling of the Middle Ages with the knowledge of the Greeks. His saints are essentially Christian men and women, glorified by martyrdom. The agonized features that the early sculptors delighted in, have given place to a beautified expression. Their figures are those of flesh and blood, but have not yet degenerated into muscularity. Powerful they are, but of a power all his own. In M. Müntz's words, "*Le propre de ce génie c'est la toute puissance de l'artiste vis-à-vis de son art, c'est l'idée formée de toutes pièces dans le cerveau avant que la main ne saisesse l'ébauchoir, et la volonté fixant cette idée dans le marbre ou le bronze avec une liberté et une audace incomparable.*"

At the end of the volume M. Müntz gives a list of all the books that have been written upon Donatello and his works.

S. BEALE.

[1] See *American Architect* for July 25, 1885.

THE PURIFICATION OF WATER BY MEANS OF IRON ON A LARGE SCALE.[2]

DURING the session of 1882–83, in a Paper on "*The Antwerp Water Works*,"[3] the author had the honor of bringing under the notice of the Institution an adaptation of Professor Bischof's method of purifying water on a large scale by filtering it through a mixture of spongy iron and gravel. The operation of the process, as far as the effect upon the water was concerned, left nothing to be desired; uninterrupted work for nearly four years did not appear to have materially enfeebled the power of the filtering medium, nor to have sensibly diminished its quantity. Two defects, however, very soon became apparent. First, the filters, dealing with the exceptionally impure waters of the Nethe, proved incompetent to purify more than half the quantity of water expected; and, secondly, the upper layer of the mixture of gravel and spongy iron gradually hardened into a crust, and became clogged with slimy matter to such an extent as to render it necessary periodically to uncover the purifying medium, loosen its upper surface, and wash away the deposits which had accumulated. But the very circumstance that these operations became necessary, affords the strongest evidence of the potent action of iron.

The purifying beds were in the first instance, covered with a layer two feet deep of fine filter sand; the water was allowed to subside for at least twelve hours before it was admitted to them, and therefore must have reached the iron in as pure a state as ordinary subsidence and sand filtration could bring it to; and yet, the moment the surface of the iron mixture was reached, action took place so energetically, that not only was the mixture itself affected in the manner described, but the influence of the iron seemed to extend even upwards, as was evidenced by the discoloration, of the sand for two or three inches above the iron.

These facts, the author considers, are a conclusive answer to those who, in the discussion on the Paper referred to, alleged that simple sand filtration would attain the same results as those which had been reached by the iron method. The deposit which caused so much trouble was a

[2] From Selected Papers of the Institution of Civil Engineers. By William Anderson, M. Inst. C. E.

[3] *Minutes of Proceedings*, Inst. C. E., Vol. lxxii, p. 24.

mixture of salts of lime, and magnesia, derived from the softening of the water, and of organic impurities partly rendered insoluble by the action of the iron, and partly curdled up into a condition too gross to pass through the filter bed.

It is hardly necessary to remark that no deposit of impurities is ever found between the sand and gravel of ordinary filter beds, hence the impurities deposited at Antwerp must have been separated by the action of the iron. The steady increase in the demand for water rendered it evident that, at no distant date, the filters would prove incompetent to supply the engines, therefore the author, in conjunction with Mr. G. H. Ogston, Assoc. Inst. C. E., set to work to devise means by which the extraordinary powers of iron might be taken advantage of at a less sacrifice of capital and space than had hitherto been found practicable. The great difficulty lay in the rooted idea that, in practice, a contact of at least three-quarters of an hour was necessary to produce the required effect. The late Professor Way and Mr. Ogston had, indeed, shown that with very finely-divided iron, unmixed with gravel, a much shorter contact would suffice; but it was known also that a filter constructed of iron only in such a condition would very soon become clogged, so that no advantage would ultimately be gained. Mr. Ogston in conjunction with the author made numerous experiments with various forms of apparatus devised so as to ensure a rapid passage of water through a mass of material kept open by means of agitation, but the success was not commensurate with the cost of working, so that plan after plan had to be abandoned.

It was at last determined to try a method which had, at the very first, been suggested to the author by Sir Frederick Abel, C. B., F. R. S., Hon. M. Inst. C. E., who in Medlock's time had already had considerable experience in the use of iron for purifying purposes, namely, that of abandoning all attempts at filtration, or the passage of water through large masses of iron in favor of simple agitation of a comparatively small quantity of iron with the water to be treated. A wrought-iron cylinder four feet six inches in diameter by six feet long was accordingly arranged so as to revolve on hollow trunnions, and was fitted up internally with six shelves or ledges, whose office would be to scoop up the charge of iron placed inside, and shower it down continuously amidst the water flowing slowly through. The inlets were at first two inches in diameter, the intention being to purify at the rate of twelve gallons per minute, which would give the supposed necessary contact of water with the iron of forty-five minutes. The cylinder was charged with nine hundred-weight of iron, and set revolving at the rate of one-third turn per minute. The trial showed that vastly too much metal was being taken up by the water; the rate of flow was therefore increased to twenty gallons per minute, when 1.2 grain of iron per gallon was dissolved; and then to sixty gallons, when 0.9 grain was taken up, a quantity still far in excess of what experience at Antwerp showed to be sufficient, namely 0.1 grain per gallon. These experiments were so encouraging, that new trunnions with four-inch pipes were fitted to the cylinder, and the apparatus was sent to Antwerp, where it was finally put to regular work on the 13th of March, 1884, at the rate of 166 gallons per minute, giving a contact of three-and-a-half minutes only, which proved to be amply sufficient to purify the water. The quantity of spongy iron used during a run in which 6,854,400 gallons were passed through was 0.176 grain per gallon, including coke and other impurities, which form about thirty per cent of the material, so that in reality about 0.1 grain of pure iron per gallon only was taken up by the water.

The great advantage of using iron in the manner described arises from the circumstances, that the surfaces of the material are always kept clean and in an active condition by rubbing against each other and against the inner surfaces of the cylinder which contains them, as well as by continually falling through the mass of water. It is found that iron in almost any divided form is suitable for the process. The most active agents are cast-iron borings and turnings, on account, no doubt, of the way in which each particle is cracked and fissured; next, probably, comes so-called spongy iron; then cast-iron granulated by being poured into water; and lastly, wrought-iron and steel turnings.

The unexpected discovery that the time of contact between the iron and the water could, in practice, be reduced to about one-twelfth of what had always been held necessary, completely changed the aspect of affairs. The author was able to convince the Directors of the Antwerp Water-Works Company, by means of the steady and perfect action of the experimental revolver for many months, that the proper course to pursue would be to adopt the system for the whole of the supply, and convert the spongy-iron filters into sand beds. This recommendation was accordingly adopted, and immediately carried out.

The apparatus consists of three revolving purifiers, together capable of dealing with 1,500 gallons per minute (2,160,000 gallons per day), a small wall engine and line of shafting for driving them, a tank fitted with a fine screen for separating coarse impurities, and a purifying house 26′ x 31′ x 11′ 6″ high, added on to the screw-pump annex of the main engine-house.

Each purifier consists of a wrought-iron cylinder, five feet in diameter by fifteen feet maximum length, supported longitudinally on hollow trunnions ten inches in internal diameter, fitted with stuffing-boxes, through which the inlet and outlet pipes pass. The journals formed upon the trunnions, which are fifteen-and-a-half inches in diameter by five inches wide, rest in cast-iron blocks fitted into standards, which are secured to the thick concrete floor which covers the whole area of the house; the blocks are each capable of vertical adjustment by means of a wedge and screw, which enables wear to be readily taken up, a precaution rendered necessary to avoid cross-strains on the inlet and outlet pipes.

For scooping up the iron and showering it down through the water, the inside of the cylinder is fitted up with five curved ledges eight inches deep, and one ledge six inches deep, the latter formed of twenty blades six inches long, each attached to a seven-eighths inch shank, which passes through the cylinder, and is secured to it by a nut. The object of this arrangement is to give the means, by placing the blades askew, of throwing the iron back toward the inlet end of the cylinder, if the current of water passing along should tend to make it travel towards the outlet.

The inlet-pipe, where it opens into the cylinder, is covered by a disk of plate-iron, two feet eight inches in diameter, fitted within five-eighths inch of the spherical end, so that the entering water is compelled to spread out radially in all directions into a disk five-eighths inch thick. The outlet-pipe was, in the experimental revolver, protected by a screen of finely-perforated zinc, for the purpose of preventing the smaller particles of iron being washed out, but it was found to choke so rapidly with moss and other floating impurities, that some different plan had to be devised. The author ascertained, by experiment, that a velocity of four inches per second was incompetent to move any but the finest iron in a vertical tube; he accordingly expanded the outlet-pipe inside the cylinder into an inverted bell-mouth, of such diameter that the current upwards would not exceed four inches a second. The iron falling over this contrivance slips down its external surface, and is not carried up again by the slow upward current of water. A good deal of trouble was expected from the probability of the iron travelling with the water, but experience has shown that this tendency either does not exist at all, or is of a very feeble nature. The mean velocity of flow through the cylinder is only a little over three-fourths inch per second, but this motion is probably very irregular, made up of endless eddies, which effectually prevent the onward motion of the iron. The experimental revolver worked for months without any shifting being observed, but the larger ones above described have shown a slight tendency in the direction expected.

The ten-inch outlet-pipe communicates by means of a bend with an upright pipe of twelve inches diameter, which rises through the bottom of a tank, to which it serves also as a partial support; the lower end rests on the concrete floor of the house, and forms a pocket or trap, fitted with a hand-hole and door, from which any fine iron which may be carried over is readily removed. In the centre of the cylinder is an ordinary man-hole, fitted with a cover, in which is a three-inch brass screw-plug, through which periodical additions to the charge of iron can be readily made.

An air-cock is provided for the purpose of letting out the air when starting, and of getting rid, periodically, of the gases which, with some waters, collect during the running of the apparatus. These gases are so poor in oxygen that they instantly extinguish a lighted taper. The three revolvers are placed side by side, and connected on the inlet side by ten-inch branches, fitted with sluice-cocks to the twenty-inch delivery main from the screw-pumps. The outlet-pipes all open into a wrought-iron tank, fifteen feet long, three feet six inches wide, and three feet deep, fitted with an incline screen, covered with galvanized wire-netting, four meshes to the inch. A shallow trough is formed at the upper end of the screen, for the purpose of receiving and draining the solid matter scraped off from time to time. The object of the screen is to catch the large quantity of moss and other impurities which, especially in summer, form in the inlet-pipes to the screw-pumps, and constantly becoming detached, find their way to the filter beds. It is noteworthy that no such growths take place after the water has been purified. To shut off any of the revolvers from the tank, a lid, fitted with an India-rubber ring, is simply laid over the end of the delivery pipe.

The driving gear consists of an annular spurring, secured around one end of each cylinder. Each ring is actuated by a train of gearing working in a self-contained frame, secured to the floor of the house, and driven by a two-and-a-half inch belt from a lay shaft, coupled direct to the crank-shaft of a wall-engine, having a cylinder six-and-a-fourth inches in diameter, nine inches length of stroke fixed in the screw pump-house. The total weight of each revolver, filled with water, and with its charge of twenty-two hundred-weight of iron, is fourteen tons six hundred-weight, and the power necessary to drive it at the rate of one third of a revolution per minute is 0.4 H. P.

The total capacity of the three revolvers is 15,000,000 gallons per week.

The cost of the establishment in this country, including the house, would be £2,300, while the cost of working after allowing five per cent deterioration of the building, and ten per cent for that of the machinery, together with five per cent interest on the outlay, would be 9*s.* 9*d.* per million gallons; the cost in wages and materials alone amounts to 2*s.* 6*d.* per million. The total quantity of iron in use is less than three-and-a-half tons. Had the original filter beds been extended so as to do the same work, the weight of iron in them would have been 1,800 tons. The iron dissolved per week in full work will be about two hundred-weight.

The revolvers were started on the 12th of March, 1885, and have continued working steadily ever since; the water supplied to the town is reported to be exceptionally bright and clear, so that no

doubt need exist as to the success of the new method of purification. The distribution of the iron throughout the length of the cylinders remains singularly even, not only with respect to quantity, but also with reference to the proportions of fine to coarse particles.

MASPERO'S EGYPTIAN RESEARCHES.

From Church of San Vitale. Ravenna. Italy.

EVERY winter it is Professor Maspéro's delightful duty to perform a voyage of discovery. Bidding a temporary farewell to the Boulak Museum, he at the same time parts company with the nineteenth century and sails away into the past. After some four or five months he returns laden with spoil, having in the course of his cruise touched at many far-distant epochs, and done business with the pyramid kings, the Pharaohs, the Ptolemies, and the Romans. From one of these expeditions he has just come back, towing five boat-loads of antiquities in the wake of his dahabeah. To unpack, arrange, and catalogue these new treasures will more than occupy him for the next eight or ten weeks.

The most striking work of the season in Upper Egypt is doubtless the excavation of the great Temple of Luxor, now for the most part disencumbered from the rubbish mounds and mud huts in which for many centuries it has been three parts buried. The village mosque, the house of the British Consul, and a few isolated hovels alone obstruct the pillared vistas of this noble structure, which rivals even Karnak in the majesty of its proportions. But apart from this great public work, which Professor Maspéro has personally superintended, there have been excursions and discoveries at various points of the river above and below Thebes. Unlike the majority of explorers, Maspéro by no means confines his attention to great historic sites. Every year he devotes a certain proportion of his time to the investigation of minor localities; that is to say, to the mounds and fragmentary ruins of ancient provincial towns, and to the search for yet undiscovered provincial cemeteries. The objects found at such places are often of much historical value. A royal inscription graven upon the face of a cliff, a rock-cut shrine unknown to Murray and the tourist, a group of tombs belonging to some period scantily represented elsewhere, a tablet recording the name and titles of some important personage who ended a stirring career in the retirement of his native province — such are the frequent fruits of these departures from the beaten track, and in such Boulak becomes richer with each successive season. Thus, just as Professor Maspéro happened, a few months ago, to arrive in the neighborhood of a certain village called El-Khozâm, some workmen who were engaged in digging a well came upon a subterranean structure built of bricks and roofed over, apparently, by a large flat stone some nine feet in length. In the East every such stone conceals buried treasure, and, as a matter of course, is smashed immediately. Fortunately, the local police interposed, and the work was suspended till Maspéro came. The structure proved to be a funerary chapel, and the flat stone a fallen tablet, or *stela*, fashioned in the form of a door and inscribed to the memory of a great Theban nobleman of the obscure time of the Eleventh Dynasty. Great was the disappointment of the assembled crowd when, instead of gold and jewels, there were found in this already desecrated sepulchre only a few fragments of limestone and a heap of potsherds. For two months after this some twenty Arabs went on heroically digging for the treasure, which of course never existed. At Siout an interesting discovery has been made, and in a very curious manner. A Mogrebin sorcerer of local fame predicted the discovery of hidden gold in the great Arab cemetery to the southward of the town. Permission being obtained to dig, and a Boulak official being present, the sorcerer performed certain incantations and pointed out the spot. Here his employers, two Greek traders of Siout, set their workmen to excavate, who, strange to say, at a depth of fourteen feet from the surface, came upon a small cavern or chamber quarried in the solid rock, and containing a brick oven, with its iron door yet perfect, a precious store of more than two hundred antique vases in stone and bronze, a lump of black fatty clay, and on the floor a quantity of leaf-gold, beaten extremely thin and rolled in little rolls. At sight of this gold the spectators became wildly excited, Copts, Greeks and Mussulmans claiming the treasure, reviling each other, and struggling to get into the vault. Just, however, as the police were well-nigh overpowered, a detachment of soldiers with fixed bayonets appeared upon the scene and dispersed the rioters. Professor Maspéro does not say whether the Greek traders got the gold or not. Its value, at all events, was estimated at only 1,400 francs. But the Museum carried off the vases, many of which are of rare archaic types, and must have been brought together from very ancient tombs of the great monarchs or princes vicegerent of the Lycopolitan nome, whose rock-cut sepulchres abound in the neighboring mountains. As for the subterraneous cavern, Professor Maspéro is of opinion that it was originally a tomb, converted by some Arab alchemist of the Middle Ages into a secret laboratory. Hence the oven, the vases, the leaf-gold, and the deposit of black clay, which proved to be largely impregnated with arsenic.

At Edfoo, celebrated for its magnificent Ptolemaic temple, search has till now been vainly made, season after season, for the necropolis that must have existed in connection with so important a locality. This necropolis has at last been discovered near the village of El Qaçâa, about six miles higher up the river. The tombs are excavated, or rather tunnelled, in a friable limestone crag, so pierced and honeycombed with pits, chambers, and galleries that the frail stone has given way in all directions, and caved-in upon the congregated dead. Only one tomb has been found intact, and this may probably be taken as a sample of those which are ruined. A shaft six feet square and twelve feet deep terminates in a small chamber with a stone bench along one side. This chamber opens into a large hall, the walls of both being surrounded with oblong niches like the *loculi* in the Roman catacombs. In these *loculi*, lying at full length, some merely bandaged, some enclosed in richly gilded and painted "cartonnages," were found a great number of mummies. Others, dragged from their resting places and despoiled of their coverings, strewed the floor. At the farther end a pile of inferior mummies, evidently of a much more recent date, were laid in an unceremonious heap. Fragments of inscriptions and the painted legends on some of the finer mummies revealed the history of the occupants of this tomb. The more important were members of a great feudal family which governed Edfoo toward the close of the Ptolemaic period. Two or three hundred years later, about the time of Septimius Severus, this family had become extinct, and the tomb was used as an open catacomb for the mummies of the minor priests and servants of the great temple.

Another interesting necropolis near Gebelein, belonging to the small provincial city of Aphroditopolis, has yielded some very ordinary mummies, but an extraordinary wealth of funerary furniture. In these tombs have been found wooden bedsteads precisely similar to the little bedsteads in use in Nubia at the present day; also stools, whetstones, bows, arrows, clubs, boomerangs, staffs, horn goblets, spoons in wood and ivory, reed pipes, bread, corn, honey, cosmetics, and even wax dolls. The weapons are mostly broken. This was purposely done in order to kill them, that their Kas or ghostly doubles should thereby be freed from the restraint of material form, and so be at the service of the dead man's double in the tomb.

At Ekhmeem, it will be remembered, we announced more than a year ago the discovery of a vast and hitherto unsuspected necropolis. Never did cemetery so well merit that name. The necropolis of Ekhmeem is a city the inhabitants of which, summoned by the inexorable explorer, rise daily by hundreds from their narrow beds, and have been so rising, without any sign of diminution in their numbers, ever since the first spade struck the soil. Thousands have been already disinterred, and apparently there are endless thousands yet to come. The mountain in which these tombs are excavated is a level limestone cliff about a mile in length. Not only is it pierced with innumerable sepulchral chambers, but every natural fissure of rock has been utilized and filled up with mummies. The descent into these tombs is for the most part tolerably steep. Some are forty feet, fifty feet, sixty feet deep, leading to what may be described as subterraneous dwellings, in which eight or ten little chambers, one above the other, contain about a dozen mummies in each. These, however, are not family vaults, but the resting places of persons in nowise connected, as the inscriptions show, one with another. They are not private dwellings of the dead, but rather hotels, let out by the proprietor. — *London Times, July* 27.

PIRATED DESIGNS.

LA CROSSE, WIS., September 8, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — Among your long and varied experience you have, no doubt, had occasion to meet with cases of piracy of plans of more or less pronounced features. I have carefully gone through the legal decisions, as published from time to time in your valuable journal, but am unable to find among the files in my possession anything that would bear directly on my case. The matter stands thus: After an extensive conflagration, destroying a whole block in one of the small towns along the Mississippi in Iowa, I was employed to make designs for a new store-building. The sketch was accepted, plans and specifications drawn up, and in due course of time paid for. The building was begun, but meanwhile the owners of the adjoining burnt district took a fancy to my plans and proceeded quietly to erect their buildings, also according to my plans, without my knowledge at the time. This was all the easier for them, as they all employed the same firm of contractors. So, instead of one building, nine of them went up. The original one has been completed, but though the specifications contained a clause to that effect, they, with the plans, have not been returned to me yet, probably because they are needed on the other buildings. Now, I would like to ask you, how am I to proceed in this matter? Will it be against the owners, or against the contractor? also, do you know of any such cases that have been decided by a court? I know of only one such case, but that was compromised before it was carried that far. I should like to hear of some precedents, in case I should be forced to go before a court with my claim. As the case may be of some interest to other

The plaza was filled with a sea of thousands and thousands of people. There was no disorder, no jostling, no unseemliness. Here and there in this sea were little islands of vacancy, occupied by pitch-pine fires over which Indians were cooking savory concoctions and selling them to hungry peasants, or where little mountains of peanuts—the favorite edible of the Mexican holiday crowd—were for sale. At the four corners of the garden bouquets of fireworks were incessantly corruscating and flocks of rockets were taking their flight aloft. Around the paths of the Zócolo, listening to the music, promenaded the wings of the gentry, to whom the peasantry tacitly yielded precedence, nor ventured to assert their democratic privileges, the natural feeling of deference to social superiors preventing them more than would the strictest rule. Above, the smoke hung motionless in the still air, ruddy with the reflected glow of the fires and diffusing the brilliance of the myriad lights in an atmosphere of enchantment.

On moonlight nights the cathedral gained a new beauty, the lines being softened and the heavy masses lifted into a spirituality which the edifice lacks under the prosaic daylight. Under such conditions the Sagrario is all beautiful; its charm of proportion speaking for its full value, while the unmeaning lines and confused shapes of its ornamentation are transmuted to an indefinite frostwork of silver, deliciously stippled with irregular shadows. I remember a picturesque sight one New Year's eve when crowds of Indians were sitting around in the cathedral yard waiting for the stroke of midnight and chanting their monotonous songs in low tones while the full moon poured its light from directly overhead.

A pleasant garden occupies what is called the *átrio* of the cathedral, in front and on the west side. The turf is perpetually soft and green and flowers are always blooming. Among the plants are a great number of the striking cactus-forms peculiar to Mexico. Here, too, is an engine-house where the water is pumped for the hose with which the garden is sprinkled during the dry season, the old-fashioned aqueduct system preventing the distribution of water over the city under pressure as yet, although there is a project for a new supply which may advantageously be brought from the surrounding mountains. This engine-house is concealed beneath a pile of lava, over which are trained vines and cactus: when the engine is running the smoke from the cone completes the resemblance to a miniature volcano. The flower-market, occupying a large iron pavilion near the west entrance of the cathedral is one of the morning sights of the city, with bouquets of great beauty and cheapness sold by Indians from the neighboring villages. At the corner of the garden is a striking group of Aztec relics, fragments of the Teocali, excavated on the spot. An architect would note with some interest the accuracy with which the stone of these relics is hewn, the trueness of the lines, the grace of the curves, and the form of the capitals in these fragments, among which are some grotesque images, including a toad with a human head in its mouth, and a huge coiled serpent. Near by, at the base of the west tower, is the famous Aztec "calendar stone," the subject of many learned dissertations, in the presence of which one may ponder whence was derived the accurate astronomical knowledge which enabled the Aztecs to calculate their calendar with the same exactness which we possess today, and which made the conquerors marvel how it was that in that respect the despised barbarians were far ahead of contemporary Europe. The stone was placed in its present position in 1790 by request of the commission of the cathedral. It is eleven feet eight inches in diameter, and is said to weigh twenty-six tons. It was quarried in the suburb of Coyoacan whence it was brought to the city in 1479 with great festivities, in the reign of Axayacatl. The stone is basalt.

A tasteless feature of the *átrio* garden, almost vieing with the Cogswell fountains of Boston and elsewhere in badness is a fountain presented to the city by the proprietors of the American circus, which is one of the permanent features of the amusements of the capital, and whose ugly structure disfigures the neighborhood of the east side of the cathedral, to the especial prejudice of the beautiful monument to the eminent cosmographer, Enrico Martinez, the work of the sculptor Noreña.

The cathedral leans perceptibly to the westward. There are few buildings of great size in Mexico which are not out of plumb, notably so being the Church of La Profesa, the National Library, which was formerly the Church of San Augustin, and the Minería, or school of mines. This is owing to the nature of the foundation. Mexico has sometimes erroneously been said to be built upon piles, like Venice. Although the soil is seemingly marshy, and so porous as to admit the waters of the adjacent Lake Téxcoco, which underlie the city, it nevertheless supports some of the heaviest buildings in Mexico, which would sink out of sight in a really boggy ground.

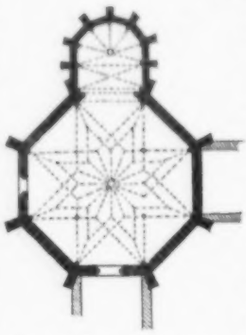
Above the clock, between the towers, there rises a tall staff, from which on holidays there floats the standard of the Republic, green, white and red, with the Aztec coat of arms, emblem of the dominance of the government over that which formerly dominated it. The government now owns the cathedral and allows the Church to use it. This reminds me of an incident of the period when the Liberals had gained the ascendency in the government, and the Church had not learned its place under the new order of things. I was at the theatre one evening with a Mexican friend, when a young man in one of the boxes was pointed out to me as Gustavo Adolofo Baz, a rising poet and dramatist. "His name indicates, I should say, that his parents were hardly devout children of the Church," I remarked.

"You are right," said my friend. "Just after the Reform his father was governor of the Federal district. It was the custom, on Ash Wednesday, for the governor to go to the cathedral and receive the key to the place where were kept the vessels for the holy sacrament, the bishop hanging it around his neck by a golden chain, and the governor keeping it until the end of the week. In accordance with this custom Governor Baz went to the cathedral at the regular time, but the bishop refused to give him the key, saying that he would not get it back again if he gave it to him. The Governor went away, saying that he would see about that. He shortly returned at the head of a body of troops, before whom he rode on horseback into the cathedral door, through the multitude which thronged the place, directly up to the high altar where he seized the bishop and all the priests in the midst of their sacred functions, packed them into the diligences which he had had drawn up in waiting at the door, and sent them down to Vera Cruz where orders were given that they should be sent to Europe by the first steamer that left the port."

That was a subject for an operatic scene worthy of Meyerbeer!

Sylvester Baxter.

PRAGUE.[1] — II.



Plan of the Carlshof Church, Prague.

On the left bank of the Moldau, scarce a trace of mediæval Prague remains save the bridge towers and various structures on top of the Hradschin. The whole *Klein-Seite* has been more than once swept away and rebuilt, and now its aspect is entirely Renaissance and Baroque. What chiefly strikes us is the immense number of huge private palaces. They tell a true tale of the pomp and wealth of Prague and its nobility during the later seventeenth and the earlier eighteenth centuries; that is, between the close of the religious wars and the opening of the great struggle between Austria and Prussia. But the Bohemian nobility now makes its chief home in Vienna, and almost all the palaces are shut up and disused, though not as yet very often turned to other purposes. Yet Prague must by no means be conceived of as one of those towns, too frequent in Germany, for instance, which are mere half-dead survivals of an earlier epoch; on the contrary it strikes us as being quite peculiarly alive. It is one of the busiest and most cheerful looking of cities in its modern burgher phase; and one of the richest, too, according to the evidence of its recent buildings. We see very plainly that it is still the capital of a prosperous nation, though no longer the home of court and aristocracy.

The many palaces give the *Klein-Seite* an especially strong southern accent which is enhanced, furthermore, by the frequency in other structures of arcaded lower stories. The great deep arches round themselves, the massive piers stretch out their toes and brace their burden on the sloping streets and squares, and the shadows and the loungers lie under and around them in a truly Italian fashion. Even the swarming soldiery look southern; are slip-shod and unworkmanlike in appearance as compared with their northern rivals, but much more graceful and picturesque and, apparently, much more at leisure to display their qualities.

We may make a short cut to the top of the Hradschin if we will. But as it must be made on foot and by steps two hundred and three. It is as well perhaps to choose the more circuitous route and approach the *Burg* from behind, through westward spreading streets and squares. We find it to be an immense agglomeration of palaces, running out into a medley of narrow streets and churches and fortifications, everywhere built up to the very verge of the cliff, and on the side remote from the town, looking over into the wide tree-planted hollow which was once the moat.

The outermost western wings of the palace, enclosing three sides of a great court-yard, were built by Scamozzi in a Doric-Renaissance fashion in 1614. There are two other large court-yards and endless other wings, some earlier, some later; the latest dating from the time of Maria Theresa. Two immense state apartments were re-decorated by Ferstel in 1868 in a pompous, white-and-gold, orthodoxly regal, late-Renaissance way; and we may at least say of them that they are well fitted for their purpose. But we are more interested in the mutilated wing that was built about 1550; that is, just at the moment when Gothic and Renaissance modes were struggling together in this part of the world. Nor could the struggle be more apparent to the eye. The greatly defaced and partly concealed exterior is thoroughly Renaissance in character with large square windows divided by pilaster-mullions and some still lingering traces of delicate ornamentation; but the interior of the chief apartment (where, we are told, not only festivities of pedestrians but also tournaments on horseback were accommodated) is Gothic in all save these windows, having a fine vaulted ceiling ribbed with the bough-like or "stump" tracery characteristic of the expiring phase of German pointed-work. I have never seen anything so hideous as its present "decoration." Not even the crudest colors in the most finikin modern patterns, or the most glaring pictures of the current restorer could equal this effort (which was made, I should guess, some fifty years ago) with its

[1] Continued from page 124, No. 507.

design of simulated tracery executed on an enormous scale in gray and black upon a whitewash background. From this piece of ruined stateliness we seek the staircase which leads up to the famous *Kaiser-Zimmer*, a square, large but low room which still fortunately preserves much the same look it must have had when the imperial governors were pitched from one of its windows in 1618, and the signal then and there and thereby given for the Thirty Years' War. Not only to the historic mind but to the tourist eye as well is this the most satisfactory corner of the *Burg*: long may the hand of the restorer be averted from it! And the outlook it affords from the very verge and corner of the Hradschin is so bewilderingly lovely that we cannot but sigh to think of the three gentlemen who lost their sense of it in their (not fatal) tumble into the ditch some fifty feet below. This practical and positive, yet picturesque and symbolic way of disposing of one's enemies seems to have been a local fashion; — there is more than one other window in Prague of which a similar tale is told.

The oldest of several towers which survive from the Hradschin fortifications is the former dungeon, called the "Black Tower," a plain, square construction of the thirteenth century. Near it we are shown the spot which was the official slaughtering-place for criminals of noble birth — a phrase which condenses into portable shape a great deal of characteristic local history. The other towers are now divided into dwellings for the poorer classes. There are also convents and private palaces and all sorts and kinds of other structures crammed together on the Hradschin. Among its churches the most important after the cathedral is St. George's. It is a much mutilated but still unrestored and therefore still decipherable small Romanesque basilica partly of the eleventh, they say, but chiefly of the twelfth century. Its towers, which stand near the east end and form the transepts, are simple enough and look time-worn enough to deserve their date. Inside we find a nave now vaulted but once flat-roofed, and galleried aisles, the vaulting of which is original. The supports are alternately piers and columns, with the simplest cube capitals. The choir is raised so that one ascends as many steps to reach it as one descends to reach the crypt, where the workmanship is of a still simpler and ruder sort. There are several very early tombs in the church but they have been restored out of all knowledge, and the entire church is threatened with a similar fate.

The cathedral, as I have said, is but a fragment. The choir is finished westwards by a temporary wall, and forms in itself so spacious a church that one imagines there can be no actual, devotional need for the completing processes now under way beyond it. The designer of the church was a Frenchman, Matthew of Arras, whom Charles the Fourth brought home with him from Avignon. But most of the work was done under his successor, a Suabian, Peter von Gmünd, called Peter Parler — a name pleasantly suggestive of a familiar friend of our trans-Atlantic infancy. And the architecture plainly corroborates what history says: the design of the choir with its beautiful polygonal apse, and with aisles and chapels following the circuit, could not be called aught else but French; but German taste and a later period are clearly shown in the outline of the supports, in the absence of capitals and in the rather flat vaulting with its net-like design. The interior has been partially restored, but not very badly, and is full of interesting monuments. The most conspicuous is the enormous sarcophagus of solid silver, with life-size angels and endless massive accessories which was a Rococo tribute to St. John Nepomuc. More delightful, however, is the Chapel of St. Wenzel, an early local ruler, which is curiously lined with semi-precious stones, set in a rough non-mechanical way. Their bright, yet mellow tints — purple, and green, and red, and yellow — form a rather barbaric but still delightfully decorative effect. Higher up on the wall are the remains of early frescoes, with figures of more than half life-size, that once must have been most exquisite, and are even now enjoyable. They are given a Bohemian authorship, but look as though an Italian hand had wrought them. Altogether the interior of this chapel which is more properly an isolated room, is an admirable subject for the water-color painter, whom I have already advised to bend his steps towards Prague.

The new work on the cathedral — the work of building the great five-aisled nave — is pretty well advanced though it will be some time yet ere the choir wall can be removed, and new and old be joined together. The tower also is to be finished and matched with another.

Peter Parler's fame rests on much wider and firmer grounds than his partial execution of the Frenchman's design for this cathedral. His hand is to be traced in many of Bohemia's finest structures, and where not the hand itself then at all events its influence. To him must largely be attributed the very French character of much Bohemian work, and to him also constant eccentricities or audacities of structure which prove him to have had a very marked architectural individuality. We can see as much without leaving the circuit of the capital where he was especially active. For his is the magnificent bridge — sixteen arches, with a total length of sixteen hundred and twenty feet — still in a singularly unmodified condition; his are several interesting churches, now mostly desecrated or restored; and his above all is the Carlshof Church, which I should call the most interesting thing in Prague.

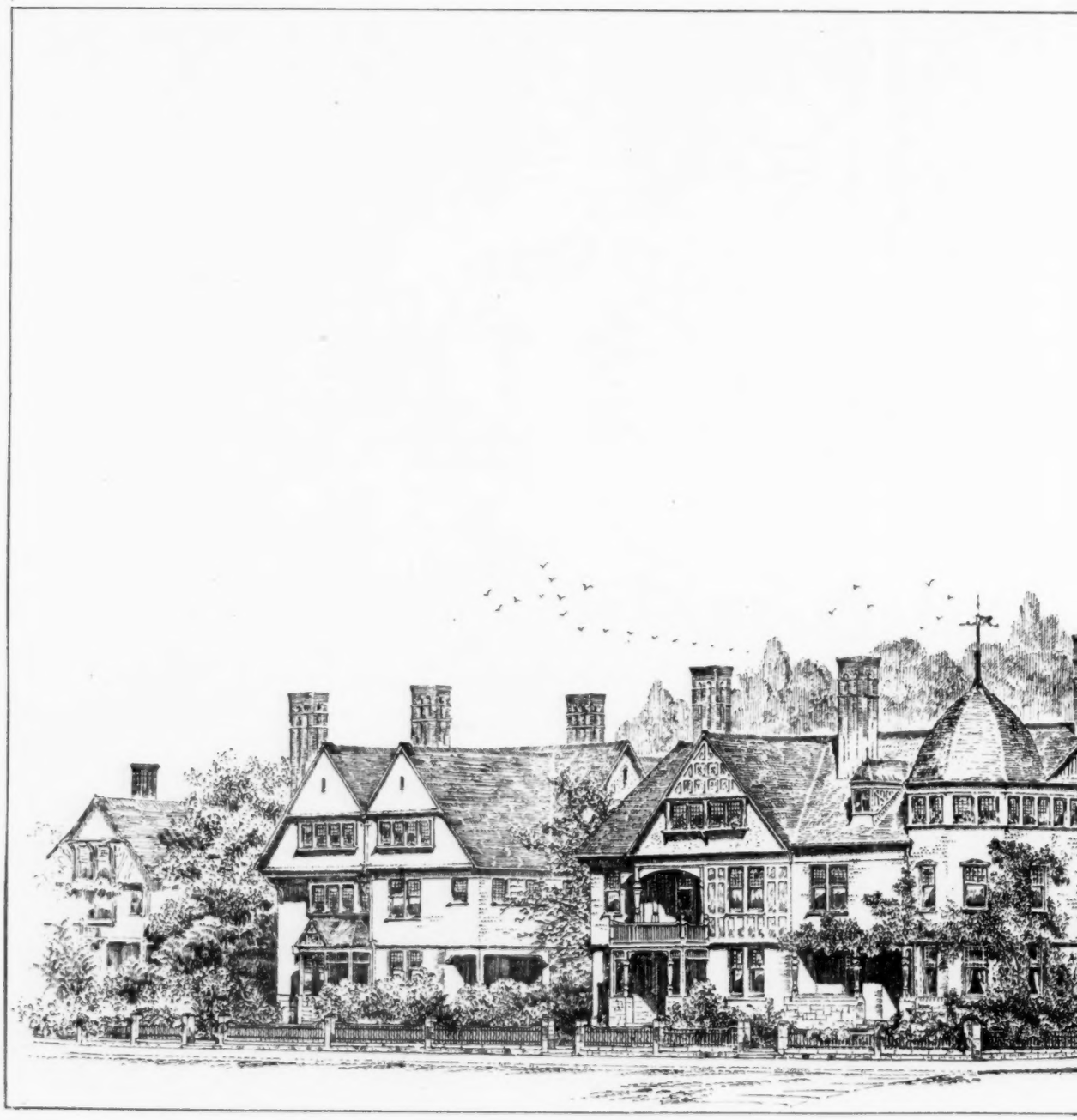
The Carlshof is an ancient convent, away off up the river in the *Neu-Stadt*, not far from the Wyscherad hill. From the parapet of its garden we see the town from the opposite point of view to that which we held on the Hradschin, and from such a distant point that the great *Burg* with its cathedral seems but a spot against the sky. Immediately below us are steeply sloping vineyards, and in the near middle distance a long succession of mutilated Gothic churches which we may be content to see from here as most of them are now disused and access to their interiors is very difficult. The Carlshof is now an almshouse, and one registers a vow that if ever brought to pauperism one will at least earn money enough to come to Prague and be a pauper here. It is not only the garden and the view, but the paupers' actual quarters which make us envious: long, wide low-studded rooms built for monastic uses in the last century, and to-day as clean and pure and comfortable looking and as prodigal of their shadowy spaciousness as even the most querulous of ancient invalids could ask.

But all architectural interest centres in Peter Parler's church. One wonders a little how he ever thought of building it, and wonders more how he ever put his thought into stone. For it is not a church of any ordinary pattern, but a great octagon, rather more than twenty-five metres in diameter, and vaulted in a clear sweep, and in the most beautiful star-like design, to almost exactly the same height above the floor. The boldness of the dome is all the more astonishing when one notes how slight is the buttressing, and how far from massive are the walls themselves. A section of the church would show the vault to be somewhat flat, as we might expect from the date of its completion — 1377. But it does not strike the eye as being in the least too flat, differing in this respect from most German structures of the time, including Peter's own cathedral, which was finished some eight years later. Unless I am greatly mistaken there is no dome of the kind in Europe so wide as this. It is certainly a masterpiece of construction, and no less a masterpiece of beauty. And it would be such even without the splendid color which adds a final charm. Here for once we may actually see and not imagine how superb a great polychromatic pointed vault may be. The decoration dates, I believe (though I cannot just now make sure on indisputable grounds) from about 1500, and seems to have been but little touched by later vandalism.[1] The general effect is of red and gold in sombre yet brilliant richness. The red has been the background for figure-subjects, distinct yet broken traces of which may still be followed; and the gold comes in the shape of broad *repoussé* leaves of metal which are laid along the vaulting ribs as though branching from them on either hand. One wonders whether the effect in its original freshness could have been at all too loud and bright; decides most probably *not*, and yet is quite content to see the dome as it is to-day. For it does not look time-worn, only time-mellowed; not faded or scarred, only subdued. It still glows and gleams and vibrates, and is altogether the most enchanting thing of the kind that one need hope to see.

Unfortunately the walls are not in so good a condition as is the vault. The long, narrow single lights which are set far above the floor have lost almost all their glass; under them rises a row of great tawdry Baroque altars; and the wall-spaces that these leave visible were disfigured at some uncertain date with very dreadful nondescript patternings. But the hand of time has worked valiantly here while working tenderly above, and the gaudiness and tawdriness have been faded into a comparatively inoffensive condition. I should note, of course, that a polygonal apse opens from one side of the octagon — else even bold Peter Parler could hardly have made a church of it; indeed is something more than an apse: it is two parallel bays of a choir with a *four*-sided polyglon beyond; an arrangement which brings a pier and not a window in the centre, and gives still another proof that Peter was nothing if not unconventional. Yet the design is very lovely, its delicate slenderness contrasting effectively with the wide, stately sweep of the great octagon itself. But in the choir and apse, alas! the restorer has lately been at work; has covered the walls and vaulting with a little diaper of crudest tints; has set up a great light-wood reredos of that hard, dry elaboration which even among moderns only a German seems able to produce; and has framed in this the loudest and most garish of paintings. We turn with an almost affectionate eye to the softened Baroque intrusions in the body of the church, and hear with consternation that they are soon to disappear. For within a few months the restorer is to complete his work; is to purge the structure of all incongruous additions, and then to add his own. All, the custodian says, is to be very thoroughly done, and the result will be eminently "*stylvoll!*" which being interpreted, means: will be just like the choir. "But the ceiling of course will not be restored?" "Oh no, of course not; we know how beautiful it is; it will only be freshened up a bit, and retouched where necessary." And, in short, he who would see one of the finest and most individual things in Europe had better make no long delay. The Baroque trappings and the general forlornness of the lower walls will not greatly afflict him, I say, for the structure is intact, and the great graceful vault sheds glory enough to cover all inharmonious details of a time-softened kind, and to blend the whole interior into a general effect of gorgeous gloom. But modern discords are not so easily obscured; — and does not danger threaten even the dome itself?

[1] I cannot even make sure of the exact dimensions of the church. The custodian says the diameter of the vault is 25 metres, or a fraction over 81 English feet; a local handbook (which I found to be untrustworthy on other points) says 23.7 metres, or 72.2 English feet; and Lübke says 75 feet, which means more than the same measure in English, whether we interpret him to reckon with the Leyden foot, commonly used in North Germany, or with the local Prague foot. In any case the vault is considerably wider than the oft-described one of similar design on the octagonal chapel at Bathala in Portugal, which is buttressed, furthermore, by its encircling chapels. And the famous octagon in Ely Cathedral measures but 65½ feet in the clear. This last fact I note, of course, not as comparing structures essentially dissimilar, but merely to give an idea of the size of the Carlshof construction. The Ely octagon is vaulted with wood. There is, I am told, an excellent monograph on the Carlshof church, but alas! in the Bohemian language.

COPYRIGHTED, 1885 JAMES R



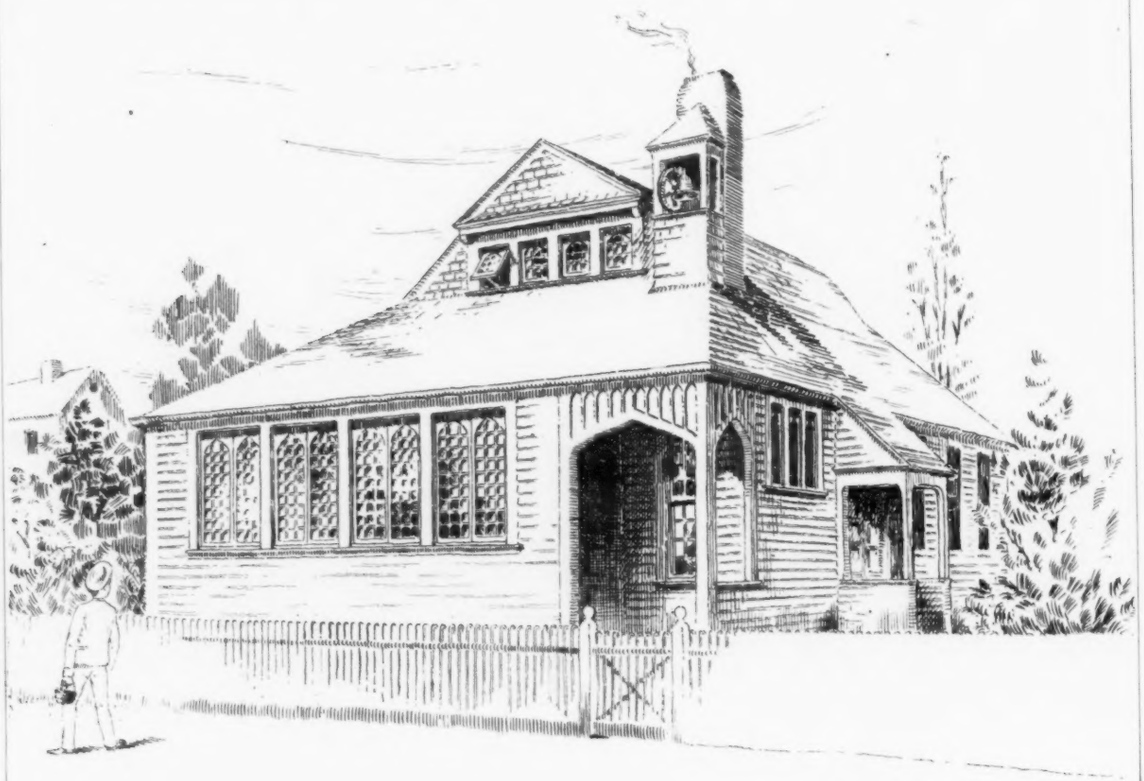
TED, 1885 JAMES R. OSGOOD & CO

SEMI-DETACHED · HOUSES · AT · MT. AUBURN · CINCINNATI · OHIO · BRUCE · PRICE · ARCHT · N.Y.

HELIOTYPE PRINTING CO. BOSTON

COPYRIGHTED 1884 JAMES R. OSGOOD & CO

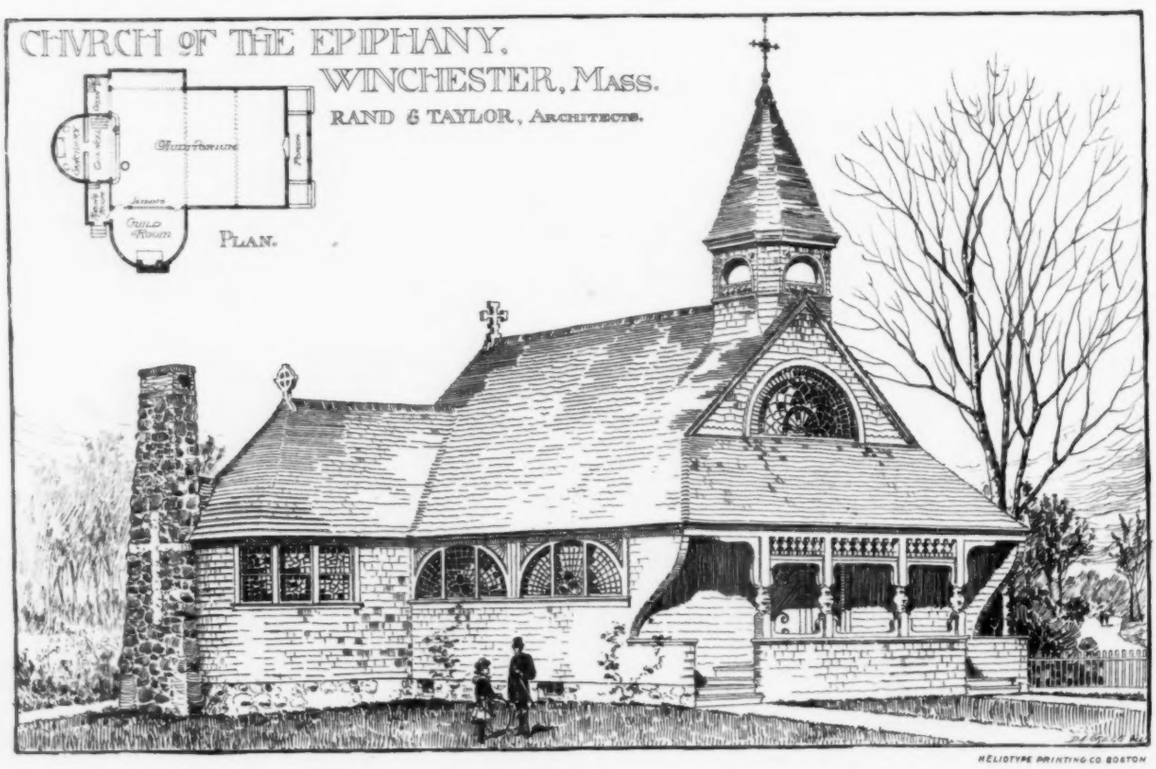
MISSION CHAPEL OF TRINITY CHURCH;
ON CLARK STREET; NEWARK · N · J:



··CHARLES A·GIFFORD: ARCHITECT··
··Nº 764 BROAD ST: NEWARK·N·J··

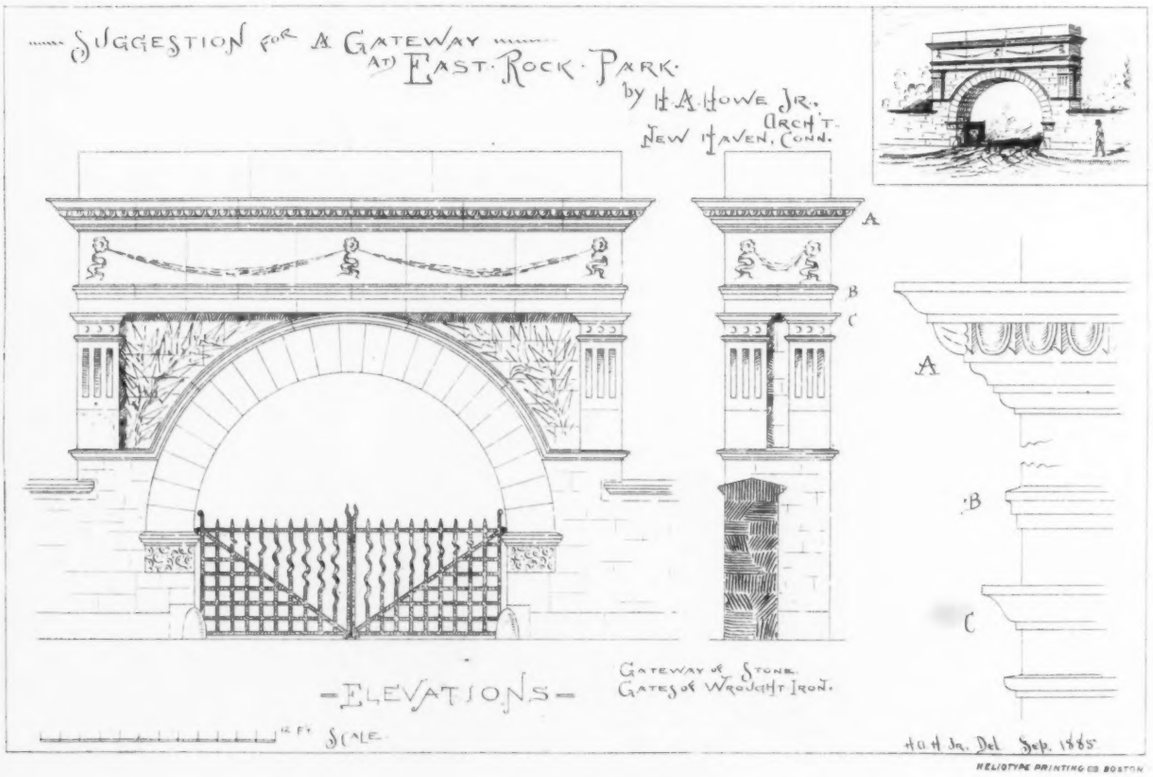
CHURCH OF THE EPIPHANY.
WINCHESTER, MASS.
RAND & TAYLOR, ARCHITECTS.

PLAN.



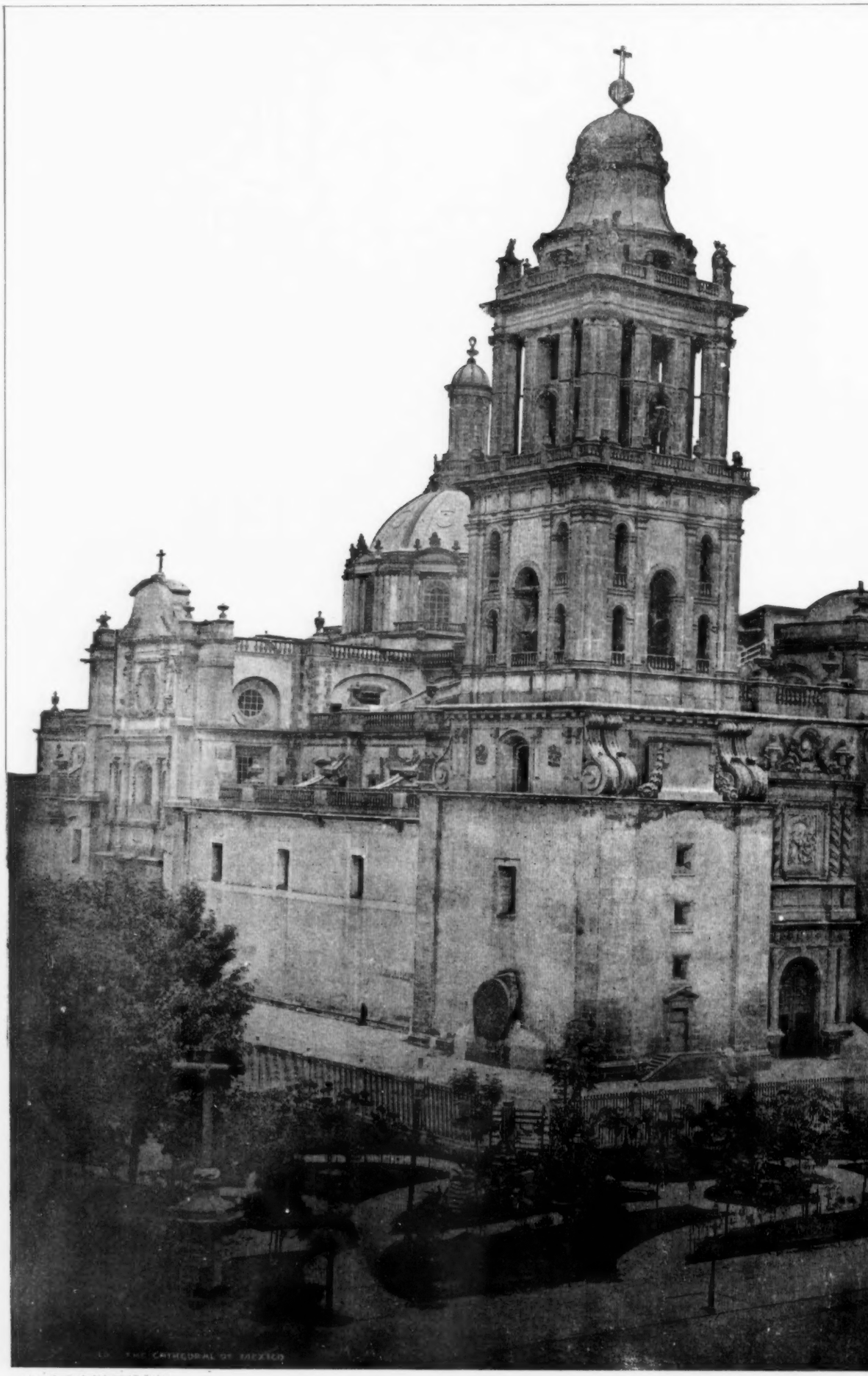
HELIOTYPE PRINTING CO. BOSTON

COPYRIGHTED 1885 JAMES R. OSGOOD & CO



HELIOTYPE PRINTING CO. BOSTON

COPYRIGHTED 1894 JAMES P. OSGOOD



Heliotype Printing Co. 28 Tremont St. Boston.

The Cathedral, Me

JAMES R. OSGOOD & CO.

al, Mexico, Mexico.

to do the work. "Take the wood, and carve one thyself," said he. Brunellesco took him at his word, and spent many months over the crucifix, sparing neither time nor trouble, and when it was finished, he invited his friend to see it. Donatello entering the house with his apron full of eggs, cheese, vegetables and other things for their breakfast, was so astonished at its beauty that he threw up his hands, and dropped all the contents of his apron on the ground. The two crucifixes are still to be seen in the churches of Santa Croce and Santa Maria Novella. If Donatello's fault at this period of his life was excessive realism, he could not have done better than go to Rome. The eternal city was at that time a virgin forest of antiquities; statues were discovered only to be mutilated; buildings were ruined; treasures abounded on every side for the few who knew their value. So assiduous were the two friends in their search for artistic remains, that they were known as "*Quelli del tesoro.*" Donatello's enthusiasm was for sculptures, Brunellesco's for the architectural fragments; a difference of tastes which cemented their friendship, and enabled them later on to work together with such success in the cathedral, in the Chapel of the Pazzi and the Church of San Lorenzo. About 1405, Donatello returned to Florence, and was working with Ghiberti, with Michelozzo and Paolo Uccello. The "Annunciation," executed in 1406 for the Cavalcanti Chapel at Santa Croce, is one of the most beautiful of Donatello's bas-reliefs. The attitude of the angel is graceful in the extreme and full of religious sentiment; but the figure of the Blessed Virgin is marred by a twist in the lower part of the body. Above the entablature which is supported by two columns, are little child-genii holding festoons, the first example of what afterwards became a common conceit of the Renaissance sculptures; but it was the revival of the statue which was Donatello's chief work. In the Middle Ages, sculpture was used for the same purpose as the book in later times. When the people were unable to read, the placing of scenes from the Gospel or ideal subjects such as the Last Judgment as bas-reliefs over portals and on façades, was necessary for their education. But when learning became common, men could dispense with pictures in stone and wood, and turn their attention to work, the merit of which consisted in beauty of form, as Victor Hugo says "*Ceci tuera cela.*" Hence the revival of single figures and groups in *ronde bosse* such as Davids, Judiths, Saints and the like, which took the place of the Aphrodites, Athenes and Dionysi of old. Donatello worked in all materials; marble, stone, stucco, bronze, terra-cotta and "*stiacciato,*" which is a kind of relief so imperceptible that it seems rather to be drawn or incised upon the stone, than chiselled.

M. Müntz is of opinion that Michael Angelo's "Moses" was inspired by Donatello's "St. John the Evangelist" in the Florence cathedral; and certainly a comparison between the two gives force to the assertion. The arms are in different position, and the heads are turned differently, and yet there is a similarity in the general effect that cannot be a mere coincidence. "*Nous ne pousserons pas l'irrévérence jusqu'à prononcer le mot de plagiat. Mais la critique manquerait à tous ses devoirs en ne revendiquant pas les droits de Donatello et en ne proclamant pas en sa faveur la priorité de l'invention.*" There are M. Müntz's words, and it is pleasant to find so great an authority giving utterance to an idea which has probably troubled many lesser minds.

The St. George of the Church of Or'San Michele is known to every one; but the bas-relief which was formerly underneath it, and is now on the other side of the church is often passed by unnoticed; and yet so beautiful is it, so harmonious in its lines, so exquisitely modelled, that even Raphael in his picture in the Hermitage did not disdain to copy it. In these works Donatello soared above the mere realist, which some of his earlier work, such as the "David" (Il Zuccone) proved him to be.

From 1425–33, Donatello associated himself with the architect Michelozzo, and to their united efforts we owe the tombs of Pope John XXIII in the Baptistery at Florence, of Cardinal Braucacci in the Church of Sant' Angelo a Nilo, Naples, and of Giovanni de Medici in San Lorenzo, and the exterior pulpit [1] (*pulpito della cintola*) of the Cathedral of Prato. In the latter work we find the first of those compositions of dancing children for which Donatello became so famous. During the Middle Ages children had been represented as pigmy men, or ill-formed, attenuated, stiff and boneless creatures; but Donatello re-introduced the natural, round, fat children of the antique sculptors; dancing, playing tambourines, singing, laughing, with wings it is true, but none the less more like Bacchantes or Genii than angels. Those now in the Bargello, which were designed for the organ-tribune of the cathedral, cannot be judged properly in their present position. Intended to be seen from below and at a distance, they are now, through the wisdom of the authorities, placed upon the ground, and thus looked down upon by the spectator.

In 1432–33 Donatello paid another visit to Rome, and to the inspiration of the antique, we owe the bronze statues of "Cupid" and "David" in the Bargello. The latter is one of his first entirely nude figures, and no doubt the easy pose and exquisite modelling of the limbs were the outcome of classic studies, added to his innate love of Nature. There is a pertness in this little David placing his foot upon Goliath's head, which is the very essence of boyhood; a self-satisfied expression which is only seen upon the faces of the extremely young when they feel that they have done an exceptionally clever deed. It was also about this time that the gates for San Lorenzo were executed. They consist of twenty panels, and although each division contains but two figures, they are all in different attitudes.

From 1443–53 Donatello was engaged upon the famous equestrian statue of Gattamelata at Padua, a work only second to the Colleone by Verrochio at Venice, and it is probable that the fine bronze horse's head in the Naples Museum is of the same period; if not a study for the statue itself. In the bas-relief of the life of St. Anthony, Donatello escaped the errors of Ghiberti, in treating sculpture as painting with effects of perspective, and of putting several subjects into one panel. Donatello was never married, and his life seems to have been devoted to his mother and his sister, with whom he lived, and his art. Earning little, he was always poor, often in debt; but he seems to have invariably made provision for paying his creditors. Simple in his dress as in his living, he is recorded to have returned a magnificent suit to his patron Cosmo de Medici, as being "too fine:" "*gli pareva essere delicato.*" And yet he had the true artistic pride, for upon one occasion, rather than receive what he considered inadequate payment for a bronze bust ordered by a Genoese tradesman, he threw it into the street where it was broken to pieces. He died in 1466, aged eighty-four, and was buried in San Lorenzo, near the tomb of his friend Cosmo de Medici.

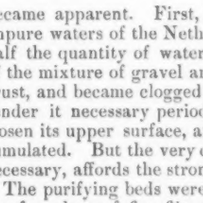
That Donatello influenced to an enormous degree the sculptors of the Renaissance there is no doubt. Vasari relates that Michael Angelo studied his work with such success that one of his bas-reliefs of the Madonna was taken for a work of Donatello. Amongst his pupils were Nanni di Banco, le Rossa, Giovanni di Pisa, Agostino di Duccio, Bertoldo, Vellano and Andrea Riccio. Verrochio expressed such admiration for him, that when dying, he requested to have a crucifix carved by Donatello placed in his hands. That Donatello studied the antique, there is no doubt; but he seems to have infused life into his marble, and warmed it by the breath of humanity. His work may not be so classically correct, but it is more human. And yet, on the other hand it possesses the sentiment that later work has lost: it unites as it were the feeling of the Middle Ages with the knowledge of the Greeks. His saints are essentially Christian men and women, glorified by martyrdom. The agonized features that the early sculptors delighted in, have given place to a beautified expression. Their figures are those of flesh and blood, but have not yet degenerated into muscularity. Powerful they are, but of a power all his own. In M. Müntz's words, "*Le propre de ce génie c'est la toute puissance de l'artiste vis-à-vis de son art, c'est l'idée formée de toutes pièces dans le cerveau avant que la main ne saisisse l'ébauchoir, et la volonté fixant cette idée dans le marbre ou le bronze avec une liberté et une audace incomparable.*"

At the end of the volume M. Müntz gives a list of all the books that have been written upon Donatello and his works.

S. BEALE.

[1] See *American Architect* for July 25, 1885.

THE PURIFICATION OF WATER BY MEANS OF IRON ON A LARGE SCALE.[2]



DURING the session of 1882–83, in a Paper on "*The Antwerp Water Works,*" [3] the author had the honor of bringing under the notice of the Institution an adaptation of Professor Bischof's method of purifying water on a large scale by filtering it through a mixture of spongy iron and gravel. The operation of the process, as far as the effect upon the water was concerned, left nothing to be desired; uninterrupted work for nearly four years did not appear to have materially enfeebled the power of the filtering medium, nor to have sensibly diminished its quantity. Two defects, however, very soon became apparent. First, the filters, dealing with the exceptionally impure waters of the Nethe, proved incompetent to purify more than half the quantity of water expected; and, secondly, the upper layer of the mixture of gravel and spongy iron gradually hardened into a crust, and became clogged with slimy matter to such an extent as to render it necessary periodically to uncover the purifying medium, loosen its upper surface, and wash away the deposits which had accumulated. But the very circumstance that these operations became necessary, affords the strongest evidence of the potent action of iron.

The purifying beds were in the first instance, covered with a layer two feet deep of fine filter sand; the water was allowed to subside for at least twelve hours before it was admitted to them, and therefore must have reached the iron in as pure a state as ordinary subsidence and sand filtration could bring it to; and yet, the moment the surface of the iron mixture was reached, action took place so energetically, that not only was the mixture itself affected in the manner described, but the influence of the iron seemed to extend even upwards, as was evidenced by the discoloration, of the sand for two or three inches above the iron.

These facts, the author considers, are a conclusive answer to those who, in the discussion on the Paper referred to, alleged that simple sand filtration would attain the same results as those which had been reached by the iron method. The deposit which caused so much trouble was a

[2] From Selected Papers of the Institution of Civil Engineers. By William Anderson, M. Inst. C. E.

[3] *Minutes of Proceedings*, Inst. C. E., Vol. lxxii, p. 24.

mixture of salts of lime, and magnesia, derived from the softening of the water, and of organic impurities partly rendered insoluble by the action of the iron, and partly curdled up into a condition too gross to pass through the filter bed.

It is hardly necessary to remark that no deposit of impurities is ever found between the sand and gravel of ordinary filter beds, hence the impurities deposited at Antwerp must have been separated by the action of the iron. The steady increase in the demand for water rendered it evident that, at no distant date, the filters would prove incompetent to supply the engines, therefore the author, in conjunction with Mr. G. H. Ogston, Assoc. Inst. C. E., set to work to devise means by which the extraordinary powers of iron might be taken advantage of at a less sacrifice of capital and space than had hitherto been found practicable. The great difficulty lay in the rooted idea that, in practice, a contact of at least three-quarters of an hour was necessary to produce the required effect. The late Professor Way and Mr. Ogston had, indeed, shown that with very finely-divided iron, unmixed with gravel, a much shorter contact would suffice; but it was known also that a filter constructed of iron only in such a condition would very soon become clogged, so that no advantage would ultimately be gained. Mr. Ogston in conjunction with the author made numerous experiments with various forms of apparatus devised so as to ensure a rapid passage of water through a mass of material kept open by means of agitation, but the success was not commensurate with the cost of working, so that plan after plan had to be abandoned.

It was at last determined to try a method which had, at the very first, been suggested to the author by Sir Frederick Abel, C. B., F. R. S., Hon. M. Inst. C. E., who in Medlock's time had already had considerable experience in the use of iron for purifying purposes, namely, that of abandoning all attempts at filtration, or the passage of water through large masses of iron in favor of simple agitation of a comparatively small quantity of iron with the water to be treated. A wrought-iron cylinder four feet six inches in diameter by six feet long was accordingly arranged so as to revolve on hollow trunnions, and was fitted up internally with six shelves or ledges, whose office would be to scoop up the charge of iron placed inside, and shower it down continuously amidst the water flowing slowly through. The inlets were at first two inches in diameter, the intention being to purify at the rate of twelve gallons per minute, which would give the supposed necessary contact of water with the iron of forty-five minutes. The cylinder was charged with nine hundred-weight of iron, and set revolving at the rate of one-third turn per minute. The trial showed that vastly too much metal was being taken up by the water; the rate of flow was therefore increased to twenty gallons per minute, when 1.2 grain of iron per gallon was dissolved; and then to sixty gallons, when 0.9 grain was taken up, a quantity still far in excess of what experience at Antwerp showed to be sufficient, namely 0.1 grain per gallon. These experiments were so encouraging, that new trunnions with four-inch pipes were fitted to the cylinder, and the apparatus was sent to Antwerp, where it was finally put to regular work on the 13th of March, 1884, at the rate of 166 gallons per minute, giving a contact of three-and-a-half minutes only, which proved to be amply sufficient to purify the water. The quantity of spongy iron used during a run in which 6,854,400 gallons were passed through was 0.176 grain per gallon, including coke and other impurities, which form about thirty per cent of the material, so that in reality about 0.1 grain of pure iron per gallon only was taken up by the water.

The great advantage of using iron in the manner described arises from the circumstances, that the surfaces of the material are always kept clean and in an active condition by rubbing against each other and against the inner surfaces of the cylinder which contains them, as well as by continually falling through the mass of water. It is found that iron in almost any divided form is suitable for the process. The most active agents are cast-iron borings and turnings, on account, no doubt, of the way in which each particle is cracked and fissured; next, probably, comes so-called spongy iron; then cast-iron granulated by being poured into water; and lastly, wrought-iron and steel turnings.

The unexpected discovery that the time of contact between the iron and the water could, in practice, be reduced to about one-twelfth of what had always been held necessary, completely changed the aspect of affairs. The author was able to convince the Directors of the Antwerp Water-Works Company, by means of the steady and perfect action of the experimental revolver for many months, that the proper course to pursue would be to adopt the system for the whole of the supply, and convert the spongy-iron filters into sand beds. This recommendation was accordingly adopted, and immediately carried out.

The apparatus consists of three revolving purifiers, together capable of dealing with 1,500 gallons per minute (2,160,000 gallons per day), a small wall engine and line of shafting for driving them, a tank fitted with a fine screen for separating coarse impurities, and a purifying house 26′ x 31′ x 11′ 6″ high, added on to the screw-pump annex of the main engine-house.

Each purifier consists of a wrought-iron cylinder, five feet in diameter by fifteen feet maximum length, supported longitudinally on hollow trunnions ten inches in internal diameter, fitted with stuffing-boxes, through which the inlet and outlet pipes pass. The journals formed upon the trunnions, which are fifteen-and-a-half inches in diameter by five inches wide, rest in cast-iron blocks fitted into standards, which are secured to the thick concrete floor which covers the whole area of the house; the blocks are each capable of vertical adjustment by means of a wedge and screw, which enables wear to be readily taken up, a precaution rendered necessary to avoid cross-strains on the inlet and outlet pipes.

For scooping up the iron and showering it down through the water, the inside of the cylinder is fitted up with five curved ledges eight inches deep, and one ledge six inches deep, the latter formed of twenty blades six inches long, each attached to a seven-eighths inch shank, which passes through the cylinder, and is secured to it by a nut. The object of this arrangement is to give the means, by placing the blades askew, of throwing the iron back toward the inlet end of the cylinder, if the current of water passing along should tend to make it travel towards the outlet.

The inlet-pipe, where it opens into the cylinder, is covered by a disk of plate-iron, two feet eight inches in diameter, fitted within five-eighths inch of the spherical end, so that the entering water is compelled to spread out radially in all directions into a disk five-eighths inch thick. The outlet-pipe was, in the experimental revolver, protected by a screen of finely-perforated zinc, for the purpose of preventing the smaller particles of iron being washed out, but it was found to choke so rapidly with moss and other floating impurities, that some different plan had to be devised. The author ascertained, by experiment, that a velocity of four inches per second was incompetent to move any but the finest iron in a vertical tube; he accordingly expanded the outlet-pipe inside the cylinder into an inverted bell-mouth, of such diameter that the current upwards would not exceed four inches a second. The iron falling over this contrivance slips down its external surface, and is not carried up again by the slow upward current of water. A good deal of trouble was expected from the probability of the iron travelling with the water, but experience has shown that this tendency either does not exist at all, or is of a very feeble nature. The mean velocity of flow through the cylinder is only a little over three-fourths inch per second, but this motion is probably very irregular, made up of endless eddies, which effectually prevent the onward motion of the iron. The experimental revolver worked for months without any shifting being observed, but the larger ones above described have shown a slight tendency in the direction expected.

The ten-inch outlet-pipe communicates by means of a bend with an upright pipe of twelve inches diameter, which rises through the bottom of a tank, to which it serves also as a partial support; the lower end rests on the concrete floor of the house, and forms a pocket or trap, fitted with a hand-hole and door, from which any fine iron which may be carried over is readily removed. In the centre of the cylinder is an ordinary man-hole, fitted with a cover, in which is a three-inch brass screw-plug, through which periodical additions to the charge of iron can be readily made.

An air-cock is provided for the purpose of letting out the air when starting, and of getting rid, periodically, of the gases which, with some waters, collect during the running of the apparatus. These gases are so poor in oxygen that they instantly extinguish a lighted taper. The three revolvers are placed side by side, and connected on the inlet side by ten-inch branches, fitted with sluice-cocks to the twenty-inch delivery main from the screw-pumps. The outlet-pipes all open into a wrought-iron tank, fifteen feet long, three feet six inches wide, and three feet deep, fitted with an incline screen, covered with galvanized wire-netting, four meshes to the inch. A shallow trough is formed at the upper end of the screen, for the purpose of receiving and draining the solid matter scraped off from time to time. The object of the screen is to catch the large quantity of moss and other impurities which, especially in summer, form in the inlet-pipes to the screw-pumps, and constantly becoming detached, find their way to the filter beds. It is noteworthy that no such growths take place after the water has been purified. To shut off any of the revolvers from the tank, a lid, fitted with an India-rubber ring, is simply laid over the end of the delivery pipe.

The driving gear consists of an annular spurring, secured around one end of each cylinder. Each ring is actuated by a train of gearing working in a self-contained frame, secured to the floor of the house, and driven by a two-and-a-half inch belt from a lay shaft, coupled direct to the crank-shaft of a wall-engine, having a cylinder six-and-a-fourth inches in diameter, nine inches length of stroke fixed in the screw pump-house. The total weight of each revolver, filled with water, and with its charge of twenty-two hundred-weight of iron, is fourteen tons six hundred-weight, and the power necessary to drive it at the rate of one third of a revolution per minute is 0.4 H. P.

The total capacity of the three revolvers is 15,000,000 gallons per week.

The cost of the establishment in this country, including the house, would be £2,300, while the cost of working after allowing five per cent deterioration of the building, and ten per cent for that of the machinery, together with five per cent interest on the outlay, would be 9*s.* 9*d.* per million gallons; the cost in wages and materials alone amounts to 2*s.* 6*d.* per million. The total quantity of iron in use is less than three-and-a-half tons. Had the original filter beds been extended so as to do the same work, the weight of iron in them would have been 1,800 tons. The iron dissolved per week in full work will be about two hundred-weight.

The revolvers were started on the 12th of March, 1885, and have continued working steadily ever since; the water supplied to the town is reported to be exceptionally bright and clear, so that no

doubt need exist as to the success of the new method of purification. The distribution of the iron throughout the length of the cylinders remains singularly even, not only with respect to quantity, but also with reference to the proportions of fine to coarse particles.

MASPERO'S EGYPTIAN RESEARCHES.

From Church of San Vitale. Ravenna. Italy.

EVERY winter it is Professor Maspéro's delightful duty to perform a voyage of discovery. Bidding a temporary farewell to the Boulak Museum, he at the same time parts company with the nineteenth century and sails away into the past. After some four or five months he returns laden with spoil, having in the course of his cruise touched at many far-distant epochs, and done business with the pyramid kings, the Pharaohs, the Ptolemies, and the Romans. From one of these expeditions he has just come back, towing five boat-loads of antiquities in the wake of his dahabeah. To unpack, arrange, and catalogue these new treasures will more than occupy him for the next eight or ten weeks.

The most striking work of the season in Upper Egypt is doubtless the excavation of the great Temple of Luxor, now for the most part disencumbered from the rubbish mounds and mud huts in which for many centuries it has been three parts buried. The village mosque, the house of the British Consul, and a few isolated hovels alone obstruct the pillared vistas of this noble structure, which rivals even Karnak in the majesty of its proportions. But apart from this great public work, which Professor Maspéro has personally superintended, there have been excursions and discoveries at various points of the river above and below Thebes. Unlike the majority of explorers, Maspéro by no means confines his attention to great historic sites. Every year he devotes a certain proportion of his time to the investigation of minor localities; that is to say, to the mounds and fragmentary ruins of ancient provincial towns, and to the search for yet undiscovered provincial cemeteries. The objects found at such places are often of much historical value. A royal inscription graven upon the face of a cliff, a rock-cut shrine unknown to Murray and the tourist, a group of tombs belonging to some period scantily represented elsewhere, a tablet recording the name and titles of some important personage who ended a stirring career in the retirement of his native province — such are the frequent fruits of these departures from the beaten track, and in such Boulak becomes richer with each successive season. Thus, just as Professor Maspéro happened, a few months ago, to arrive in the neighborhood of a certain village called El-Khozâm, some workmen who were engaged in digging a well came upon a subterranean structure built of bricks and roofed over, apparently, by a large flat stone some nine feet in length. In the East every such stone conceals buried treasure, and, as a matter of course, is smashed immediately. Fortunately, the local police interposed, and the work was suspended till Maspéro came. The structure proved to be a funerary chapel, and the flat stone a fallen tablet, or *stela*, fashioned in the form of a door and inscribed to the memory of a great Theban nobleman of the obscure time of the Eleventh Dynasty. Great was the disappointment of the assembled crowd when, instead of gold and jewels, there were found in this already desecrated sepulchre only a few fragments of limestone and a heap of potsherds. For two months after this some twenty Arabs went on heroically digging for the treasure, which of course never existed. At Siout an interesting discovery has been made, and in a very curious manner. A Mogrebin sorcerer of local fame predicted the discovery of hidden gold in the great Arab cemetery to the southward of the town. Permission being obtained to dig, and a Boulak official being present, the sorcerer performed certain incantations and pointed out the spot. Here his employers, two Greek traders of Siout, set their workmen to excavate, who, strange to say, at a depth of fourteen feet from the surface, came upon a small cavern or chamber quarried in the solid rock, and containing a brick oven, with its iron door yet perfect, a precious store of more than two hundred antique vases in stone and bronze, a lump of black fatty clay, and on the floor a quantity of leaf-gold, beaten extremely thin and rolled in little rolls. At sight of this gold the spectators became wildly excited, Copts, Greeks and Mussulmans claiming the treasure, reviling each other, and struggling to get into the vault. Just, however, as the police were well-nigh overpowered, a detachment of soldiers with fixed bayonets appeared upon the scene and dispersed the rioters. Professor Maspéro does not say whether the Greek traders got the gold or not. Its value, at all events, was estimated at only 1,400 francs. But the Museum carried off the vases, many of which are of rare archaic types, and must have been brought together from very ancient tombs of the great monarchs or princes vicegerent of the Lycopolitan nome, whose rock-cut sepulchres abound in the neighboring mountains. As for the subterraneous cavern, Professor Maspéro is of opinion that it was originally a tomb, converted by some Arab alchemist of the Middle Ages into a secret laboratory. Hence the oven, the vases, the leaf-gold, and the deposit of black clay, which proved to be largely impregnated with arsenic.

At Edfoo, celebrated for its magnificent Ptolemaic temple, search has till now been vainly made, season after season, for the necropolis that must have existed in connection with so important a locality. This necropolis has at last been discovered near the village of El Qaçâa, about six miles higher up the river. The tombs are excavated, or rather tunnelled, in a friable limestone crag, so pierced and honeycombed with pits, chambers, and galleries that the frail stone has given way in all directions, and caved-in upon the congregated dead. Only one tomb has been found intact, and this may probably be taken as a sample of those which are ruined. A shaft six feet square and twelve feet deep terminates in a small chamber with a stone bench along one side. This chamber opens into a large hall, the walls of both being surrounded with oblong niches like the *loculi* in the Roman catacombs. In these *loculi*, lying at full length, some merely bandaged, some enclosed in richly gilded and painted "cartonnages," were found a great number of mummies. Others, dragged from their resting places and despoiled of their coverings, strewed the floor. At the farther end a pile of inferior mummies, evidently of a much more recent date, were laid in an unceremonious heap. Fragments of inscriptions and the painted legends on some of the finer mummies revealed the history of the occupants of this tomb. The more important were members of a great feudal family which governed Edfoo toward the close of the Ptolemaic period. Two or three hundred years later, about the time of Septimius Severus, this family had become extinct, and the tomb was used as an open catacomb for the mummies of the minor priests and servants of the great temple.

Another interesting necropolis near Gebelein, belonging to the small provincial city of Aphroditopolis, has yielded some very ordinary mummies, but an extraordinary wealth of funerary furniture. In these tombs have been found wooden bedsteads precisely similar to the little bedsteads in use in Nubia at the present day; also stools, whetstones, bows, arrows, clubs, boomerangs, staffs, horn goblets, spoons in wood and ivory, reed pipes, bread, corn, honey, cosmetics, and even wax dolls. The weapons are mostly broken. This was purposely done in order to kill them, that their Kas or ghostly doubles should thereby be freed from the restraint of material form, and so be at the service of the dead man's double in the tomb.

At Ekhmeem, it will be remembered, we announced more than a year ago the discovery of a vast and hitherto unsuspected necropolis. Never did cemetery so well merit that name. The necropolis of Ekhmeem is a city the inhabitants of which, summoned by the inexorable explorer, rise daily by hundreds from their narrow beds, and have been so rising, without any sign of diminution in their numbers, ever since the first spade struck the soil. Thousands have been already disinterred, and apparently there are endless thousands yet to come. The mountain in which these tombs are excavated is a level limestone cliff about a mile in length. Not only is it pierced with innumerable sepulchral chambers, but every natural fissure of rock has been utilized and filled up with mummies. The descent into these tombs is for the most part tolerably steep. Some are forty feet, fifty feet, sixty feet deep, leading to what may be described as subterraneous dwellings, in which eight or ten little chambers, one above the other, contain about a dozen mummies in each. These, however, are not family vaults, but the resting places of persons in nowise connected, as the inscriptions show, one with another. They are not private dwellings of the dead, but rather hotels, let out by the proprietor. — *London Times, July 27.*

PIRATED DESIGNS.

LA CROSSE, WIS., September 8, 1885.

TO THE EDITORS OF THE AMERICAN ARCHITECT: —

Dear Sirs, — Among your long and varied experience you have, no doubt, had occasion to meet with cases of piracy of plans of more or less pronounced features. I have carefully gone through the legal decisions, as published from time to time in your valuable journal, but am unable to find among the files in my possession anything that would bear directly on my case. The matter stands thus: After an extensive conflagration, destroying a whole block in one of the small towns along the Mississippi in Iowa, I was employed to make designs for a new store-building. The sketch was accepted, plans and specifications drawn up, and in due course of time paid for. The building was begun, but meanwhile the owners of the adjoining burnt district took a fancy to my plans and proceeded quietly to erect their buildings, also according to my plans, without my knowledge at the time. This was all the easier for them, as they all employed the same firm of contractors. So, instead of one building, nine of them went up. The original one has been completed, but though the specifications contained a clause to that effect, they, with the plans, have not been returned to me yet, probably because they are needed on the other buildings. Now, I would like to ask you, how am I to proceed in this matter? Will it be against the owners, or against the contractor? also, do you know of any such cases that have been decided by a court? I know of only one such case, but that was compromised before it was carried that far. I should like to hear of some precedents, in case I should be forced to go before a court with my claim. As the case may be of some interest to other

members of the profession an answer in the columns of your journal will be gladly received. Yours respectfully,

Gustave Stoltze.

[Unless Mr. Stoltze had copyrighted his design, he could not, we think, prevent any one, who fancied his store-front, from building another like it. The unauthorized use of his drawings is, however, a different matter. In this the contractor seems to have been at fault, and the only question would be, whether the architect or his client is the proper person to call the contractor to account. Mr. Stoltze says that the specification contained a clause requiring that the drawings should be returned to the architect. Now, as the specification forms ordinarily a part of the contract between the owner and the builder, the failure of the latter to comply with this stipulation constitutes a violation of his agreement with the owner, who is, of course, entitled to recover compensation from the builder for all damage that he may have suffered from the breach of this agreement, including, we think, such indemnity as he may think proper to allow the architect for the injury to his reputation and business. It is possible that Mr. Stoltze might recover compensation in his own name from the builder for the injury resulting from the misappropriation of the drawings entrusted to the latter, but such a claim would bring up the vexed question as to the proprietorship of the drawings which the builder had misused, and it would be much better to act through the owner, who has an undoubted right to punish the breach of contract, and, besides what he may suffer by reason of his obligations to the architect, has a grievance of his own, in having the effect of his building cheapened by the erection of duplicates near it. So far as the owners of the duplicates are concerned, it is hardly likely that they would have conspired with the builder to use surreptitiously the drawings of an architect unknown to them; and our experience is that such persons, on the architect's position being explained to them, are generally willing to pay a fair compensation for the services which he has unintentionally rendered them. — Eds. American Architect.]

NOTES AND CLIPPINGS.

The Pension Bureau Frieze: — A member of congress who was a cavalry officer during the war visited the new Pension Bureau the other day for the first time and was overcome when he made the discovery that every cavalry-man in the terra-cotta bas-relief frieze around the building is holding the horse's reins in the right instead of the left hand. — *Washington Critic.*

Inigo Jones. — Inigo Jones designed movable scenery and contrivances for the Court masques, especially those written by Ben Jonson. Inigo Jones was a true-born Londoner, born near St. Paul's in the days when Queen Bess ruled the waves around England, the son of a citizen and cloth-worker, a respectable man, in religion a Catholic. Inigo was apprenticed to a joiner, but early distinguished himself by his skill with his pencil, and gained notice for his designs, more particularly landscape views. He first displayed his talent and ingenuity in the preparation of the Court masques, at the time the fashion. Ben Jonson and he were long associated, but the friendship was cut short by a bitter life-long quarrel; the poet satirized the artist without mercy as "Lantern Leatherhead" and "Inigo Marquis Would-be!" Inigo was buried at St. Bennet's, Paul's Wharf. The story of his life is half droll, half pathetic. His only daughter and heiress married John Webb, his pupil and executor. Webb was, like Inigo Jones, an architect, but he designed and painted the scenery of the "Siege of Rhodes," one of the earliest English operas — a piece produced with unparalleled splendor, wherein, learned authorities say, scenes were for the first time introduced in public on the English stage. Hangings had previously been used, scenes employed only in private performances, we are told. — *London Society.*

The Recession of Niagara. — Sir Charles Lyell, in 1841 and 1842, estimated the gradual recession of Niagara Falls by the undermining of its brink at the rate of about one foot per annum. Recent investigation of the subject by a Commission for the establishment of a State reservation at the falls, have, however, shown that this and other estimates are more or less erroneous. A map, based on surveys of the falls made in 1883 by Mr. Thomas Evershed for the New York State surveyor, have shown that in the forty-one years ending 1883 the annual rate of maximum recession has been six and one-sixth feet. For the eight years ending 1883 this rate is given as sixteen and one-half feet, so that the rate of recession has been higher of late. These results were obtained from the Canadian Fall, while the American Fall was found to have receded at the rate of ten inches per annum during the forty-one years ending 1883. It has been shown by the surveys that these two falls were once united; and that, supposing the rate of recession to continue, the Niagara gorge will be cut through in some 10,000 years. Lyell's estimate was 35,000 years. Of course these attempts to calculate the cutting of the entire gorge, which terminates at the heights near Lake Ontario, assume that the hardness of the shale and lime-rocks, volume of water, and height of the fall, continue much the same as they are now. — *Engineering.*

A Unique Grant Monumnt. — The State fair at Peabody, Kan., has the honor of raising the first monument to Gen. Grant. Their achievement is peculiarly a State product, and will doubtless remain unique in the history of Grant memorials. It is an obelisk of wood standing upon a pedestal, the whole covered with various forms of corn, and standing forty-seven feet high. The sides of the obelisk are made of ears of yellow corn, and bear the inscriptions, "Peace," "Plenty," "Union," and "Liberty" worked in red ears adown the faces. The pedestal faces are covered with mosaics of corn-stalks, each face having a portrait of General Grant set in weaths of pop-corn ears with the husks on, brightened with red peppers, representing laurel berries. The cornice of the pedestal is made of sorghum stalks, and each corner is adorned with a hugh yellow pumpkin. At each side of the shaft are stacks of mimic arms, made of giant corn-stalks and past these the Kansas grangers file to pay their tribute of respect to the dead, mingled with open-mouthed wonder at the greatness of their State. This structure is not a work of art, and one can hardly read the description without a smile, but there is about it a touch of that deeper, broader poetry that underlies American life and institutions. It could have been raised nowhere else. No people accustomed to the horrors of war could have represented a stand of arms by corn-stalks; but a corn-stalk bayonet is a pleasanter object than a steel one, nevertheless. The Kansans built their obelisk of corn because they are proud of their mammoth, shining ears; and very good things they are to be proud of, though not so worthy of honor as the peace and prosperity that made their growth and dedication to such a use possible; those are in direct accord with the last wish of the great commander for his reunited country. — *Springfield Republican.*

A Dwelling which antedates the Conquest. — A correspondent writes to the London *Times* from Deerhurst, in Gloucestershire: Within the last week an interesting discovery has been made here of the existence of a very ancient structure. It was always known that a portion of a farmhouse called Abbot's Court, belonging for centuries, first to the Abbey, and, subsequently, to the Chapter of Westminster, was of considerable antiquity, but there was nothing on the surface to determine its age. Within the last few days, however, it has been subjected to careful examination, and features hidden for ages have been brought to light. The original house was small, 30 feet long on the inside, with walls two-and-one-half feet thick. Its four external walls are perfect. In one of the end walls is inserted a large round-headed archway, having very solid jambs and imposts. A smaller archway is found in the wall forming the front of the house. Both these archways tend slightly to the horse shoe form — that is to say, the centre of the semi-circular head is rather above the spring of the arch. The house must have always had an upper story; and in this there is now to be seen a round-headed window, splayed both inside and outside. The reason for assigning so very early a date to an existing dwelling house is the following: Its rude and very peculiar architecture follows closely that of Deerhurst Church, which is within a stone's throw of it. Now, there is good evidence to show that the church was built in the year 1056. The late Mr. Parker entitled it "the oldest dated church in England." Just about the time given above, Edward the Confessor gave the large Deerhurst Manor, including the estate on which Abbot's court stands, to his new Abbey of St. Peter's, Westminster. Abbot's court may have been erected at the actual time of the donation. It is singular that close to this very ancient house there should be standing another also of remarkable antiquity. This is Deerhurst Priory, which was a religious house dating from the eighth century, and belonged to the Abbey of St. Denis, near Paris. A portion of its buildings still exist, and they show a Norman column in the cellar of the inhabited house.

A Lawsuit over the Construction of Niagara's Cantilever Bridge. — The wonderfully rapid construction of the Michigan Central Cantilever Bridge, spanning the Niagara, two years ago, has been recalled by an action which has been on trial at Lockport for the last three days in the Circuit Court before Judge Henry A. Child and a jury. The suit was brought by Charles A. Turner, of Suspension Bridge, against General George S. Field and others, of Buffalo, to recover over $3.000 for extra work and incidentals connected with it on the gigantic "false work" or scaffolding which was built from top to bottom of the high bank of the river and extending over the water on either side. It was the largest job of scaffolding ever undertaken in this region, and in itself was one of the greatest curiosities connected with the Cantilever Bridge. A description of the work appeared in *The Times* of September 2, 1883, and photographs of it were exhibited to the jury on this trial. The defendants were what was known as the Central Bridge Company, of Buffalo, and took the entire contract for the construction of the bridge. They sublet the work to Dawson, Simms & Mitchell under a precise written contract, which largely left the direction of the work to the engineer in charge, and which prohibited any further subletting. Notwithstanding this the sub-contractors did let to the plaintiff the false work. The plantiff was proceeding with the work, beginning at the top and working down, when he was interrupted by the engineer, who insisted that this method would not do; that in the excavation of "mud sills" or vests for the timbers on the bank the throwing out of the soil and stones from the upper ones, might form a shaky and insufficient foundation for those farther down, and the whole work be endangered, requiring, in short, that the plaintiff should begin at the bottom of the bank and build upward. As testified by the plaintiff the additional cost of building this false work in the way required by the engineer was $2,200, and the construction of long "slides" for the timbers, and some other items, added at least $1,000 to it. The plaintiff says that before proceeding he saw General Field and stated the difficulty to him and his unwillingness to go on unless the additional sum was paid him; that General Field visited the work, spoke of the great importance of having it securely done and the need of avoiding delay, and finally told plaintiff to go on and build it according to the views of the engineer, and that he and his associates would pay the extra expense. This new contract was positively denied by Field. He swore that he answered the plaintiff that Dawson, Simms & Mitchell were under contract to do all this work, and that he would pay no one else, and would not pay the plaintiff. This was the gist of a mass of evidence, most of which related to the nature of the work, the value of it, and the difficulty of performing it in the manner required by the engineer. There was absolutely no testimony to corroborate either party as to the question of defendants' engagement to pay for the extra work, but the probabilities seemed to favor General Field's denial, inasmuch as the defendants already had the written contract of Dawson, Simms & Mitchell to do the whole work. The evidence was closed on Friday night. At the opening of the court next morning neither the plantiff nor his attorney was present, and the Judge proceeded with his charge without any summing up. He had half finished it when the plaintiff and his counsel appeared, and the latter asked permission to address the jury. This was denied by the court, and the charge was finished. It was rather favorable to the defendants. The jury returned a verdict for the plaintiff for $38.08, which appears to be merely one-third of the expense of a watchman paid by plaintiff. — *New York Times.*

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

BUILDING PATENTS.

[Printed specifications of any patents here mentioned, together with full detail illustrations, may be obtained of the Commissioner of Patents, at Washington, for twenty-five cents.]

325,231. SEWER-TRAP AND CESSPOOL.—Howard G. Badgley, New York, N. Y.

325,237. DEVICE TO BE SUBSTITUTED FOR THRESHOLDS.—Alfred A. Chase and Daniel H. Hesselton, Holden, Mass.

325,243. VENTILATING ATTACHMENT.—Benjamin J. Goldsmith, Saratoga Springs, N. Y.

325,245. SLIDING DOOR.—Herbert H. Hewitt, New York, N. Y.

325,281. HOUSE-FURNACE.—James Spear, Philadelphia, Pa.

325,299. DOOR-OPENER.—Chas. E. Whitney, Brooklyn, N. Y.

325,333. WINDOW CONSTRUCTION AND FASTENING AND HINGE.—Ole Flagstad, Hamar, Norway.

325,381. FIRE-ESCAPE.—William C. Barkley, Litchfield, Ill.

325,399. FIRE-ESCAPE.—Daniel F. Davis, Easton, Pa.

325,417. SMOKE-HOUSE.—Joseph Kremser, Springfield, N. Y.

325,445. ATTACHING KNOBS TO SPINDLES.—Wm. Regan, Branford, Conn.

325,449. CUT-OFF.—Frederick Schueler, La Salle, Ill.

325,450. FIRE-ESCAPE.—Samuel Snyder, White Sulphur Springs, Mont.

325,463. ANNUNCIATOR.—Henry E. Waite, New York, N. Y.

325,479. SPIRIT-LEVEL.—Robert Barker, Lansing, Mich.

325,481. SASH-FASTENER.—Wm. J. Barron, Huntsville, Ala.

325,484. SINKING HYDRAULIC PILES.—Lowell E. Blake, El Paso, Tex.

325,486. TRAP FOR BATH-TUBS, SINKS, ETC.—Chas. A. Blessing, Philadelphia, Pa.

325,505. SCRATCH-GUAGE.—David S. Conrad, Waynesborough, Pa.

325,529. WINDOW-SCREEN.—Steele F. Gillmore, Princeton, Ind.

325,543. KNOB ATTACHMENT.—Robert M. Keating, Springfield, Mass.

325,553. AUTOMATIC VALVE FOR SEWER-PIPES.—Thomas L. McKeen, Easton, Pa.

325,554. STEAM-RADIATOR.—Thomas L. McKeen, Easton, Pa.

325,556. JOINT FOR METAL TUBES.—Willam A. Miles, Copake Iron Works, N. Y.

325,571. SPOKESHAVE.—Charles W. Smith, Westerly, R. I.

325,587. WATER-CLOSET.—William Bunting, Jr., Boston, Mass.

325,597. WEATHER-STRIP.—Green L. Fowler, Clarksburg, Mo.

SUMMARY OF THE WEEK.

Baltimore.

CHURCH.—The corner-stone of St. Gregory Roman Catholic Church, in the north-western section of the city, was laid September 13.

BUILDING PERMITS.—Since our last report thirty-five permits have been granted, the more important of which are the following:—

Schamburg & Dashield, 5 three-st'y brick buildings, e s Riverside Ave., s Clement St.

C. Wolf, three-st'y brick building, n s Lombard St., bet. Eden and Spring Sts.

John Miller, 3 two-st'y brick buildings, w s Bruce Alley, n Harlem Ave.

Dr. G. H. Grimes, 2 three-st'y brick buildings, n s Fayette St., bet. Frederick and Harrison Sts.

R. L. Cutting, 5 three-st'y brick buildings, w s Charles St., s Hoffman St.

S. B. Derr, 6 three-st'y brick buildings, e s Linden Ave., n Robert St.

F. Wilson, 5 three-st'y brick buildings, s s Edmonson Ave., com. cor. Kirby's Lane.

W. H. Fowler, 11 two-st'y brick buildings, n s St. Joseph's St., e Bond St.

E. W. Gorman, 19 two-st'y brick buildings (sq.) s s Christian St., bet. Payson and Monroe Sts.

G. W. Donohue, 4 two-st'y brick buildings, n s Jefferson St., bet. Chester and Duncan Alley; and 12 two-st'y brick buildings, w s Duncan Alley, bet. Jefferson and McElderry Sts.

G. W. Moke, Jr., 4 three-st'y brick buildings, w s McCulloch St., n of Laurens St.

Boston.

BUILDING PERMITS.—*Wood.—Chambers St.*, cor. Waters St., dwell. and store, 12′ x 19′ and 19′ x 40′; Mrs. J. Harleigh, owner; J. McCusker, builder.

Brick.—Marlborough St., No. 401, dwell., 36′ x 58′; owner, William Simes; builder, G. F. Shepard.

Dudley St., cor. Langdon St., school., 85′ 6″ x 141′; owner and builder, City of Boston.

Decatur St., No. 4, tenement, 22′ x 37′; owner, John May, builder, Peter Scheil.

Brooklyn.

BUILDING PERMITS.—*Lafayette Ave.*, n s, 250′ e Broadway, 6 two-and-a-half-st'y frame dwells., tin cornices; cost, each, $3,000; owner, Anna A. Fardon, 1145 Lafayeste Ave.; architect and mason, Alfred A. Fardon.

Cook St., w s, 100′ e White St., three-st'y frame shop and dwell., tin roof; cost, $3,500; owner, A. Fluegel, 73 Ten Eyck St.; architect, H. Vollweiler.

Fourth St., n s, 109′ 5″ e Hoyt St., one-st'y brick oven or kiln for burning tiles; cost, $6,600; owner, architect and builder, International Tile Co., 92 Third St.

Elm St., Nos. 82, 84, 86 *and* 88, s s, 25′ e Evergreen Ave., 4 three-st'y frame (brick-filled) tenements and one store, tin roofs; cost, total, $16,000; owners and builders, C. C. Grau and C. Hartmann, Sumner Ave. and Hopkins St.; architect, Th. Engelhardt.

Leonard St., No. 682, e s, 150′ n Meserole Ave., three-st'y frame dwell., gravel roof; cost, $6,000; owner, Mrs. Abby J. Bartlett, 209 Calyer St.; architect, F. Weber; builders, S. F. Bartlett and I. & J. Van Riper.

Prospect Pl., s s, 184′ e Rogers Ave., 3 two-st'y brick dwells., gravel roofs; cost, each, $7,500; owner, Mary E. Fowler, 8 Verona Pl.; architects, Parfitt Bros.; builder, L. Fowler.

Willow St., n e cor. Pineapple St., 3 four-st'y brick and brown-stone dwells., tin roofs; cost, total, $25,000; owner, Charles Arbuckle, Willow St.; architect, W. B. Tubby.

Fifth St., e s, 75′ n North Eleventh St., two-st'y frame factory and dwell. and one-st'y extension, felt roof; cost, $4,500; owner, Daniel Culhane, Fourth St., cor. South Fifth St.; architect and contractor, Thomas A. Akert; masons, Mead & Son.

Graham Ave., No. 466, e s, 75′ s Meeker Ave., three-st'y frame tenement, tin roof; cost, $4,800; owner, Antone Long, 38 Meeker Ave.; architects and contractors, Sammis & Bedford; masons, Doyle & Brazill.

Chauncey St., n s, 200′ e Patchen Ave., 2 three-st'y frame (brick-filled) tenements, tin roofs; cost, each, $3,500; owner, Johanna F. Sullivan, 1894 Fulton St.; architect, M. Walsh; builder, J. F. Sullivan.

Columbia Heights, No. 158, w s, 25′ s Clark St., four-st'y dwell., tin roof; cost, $25,000; owner, Wm. A. White, 125 Remsen St.; architect, W. B. Tubby; builders, J. Thatcher and F. D. Norris.

Sixth Ave., n s, 97′ 10″ w Sixth Ave., 3 two-st'y brown-stone dwells., tin roofs, wooden cornices; cost, each, $3,500; owner, architect and builder, Thos. Bulter, 371 Sixth Ave.

Ten Eyck St., No. 207, n s, 150′ e Humboldt St., four-st'y frame (brick-filled) tenement, tin roof; cost, $5,800; owner, Herman Wild, 226 Graham Ave.; architect, Th. Engelhardt; contractor, D. Kreuder; mason, C. Wahler.

Central Ave., Nos. 170, 172 *and* 174, s s, 73′ from Elm St., 3 three-st'y frame tenements, tin roofs; cost, total, $12,500; owner, Margaretha Schwab, 166 Central Ave.; architect, E. Schrempf; builder, G. Schwab.

Ivy St., No. 75, n s, about 300′ e Bushwick Ave., two-st'y frame dwell., tin roof; cost, $3,000; owner, John A. Hopper, 75 Woodbine St.; architect, A. Gariepy; builders, Simpson & Lowe.

Broadway, w s, 25′ s Ellery St., three-st'y frame store and tenement, tin roof; cost, $4,800 to $5,000; owner and architect, John Stockel, 249 Ellery St.

Wallabout St., s s, 175′ e Harrison Ave., three-st'y frame tenement, tin roof; cost, $4,500; owner, Geo. Schoch, 374 Wallabout St.; architect, H. Vollweiler; builders, Mr. Hoepfer and Mr. Fuchs.

Monroe St., s s, 80′ w Patchen Ave., three-st'y brick tenement, gravel roof, wooden cornice; cost, $4,000; owner, Phœbe M. Saxton, 75 Willoughby Ave.; architect and builder, R. Van Brunt.

Herkimer St., n s, 50′ w Buffalo Ave., 3 two-st'y frame (brick-filled) dwells., tin roofs; cost, each, $4,500; owner, W. Wubke Grothe, Herkimer St.; architect, E. Schrempf; builder, J. Hertlein.

Lafayette Ave., n w cor. Lewis Ave., 5 two-and-a-half-st'y brown-stone stores and flats, tin roofs; cost, corner, $7,000; others, each, $4,500; owner and builder, P. F. O'Brien; architect, I. D. Reynolds.

ALTERATIONS.—*Broadway*, w s, 50′ s Willoughby Ave., repair upper stories of four buildings damaged by fire; cost, $3,000; owner, Benj. Warner; builder, S. Faitoute.

Gates Ave., No. 885, three-st'y brick extension, tin roof, wooden cornice, interior alterations and new front walls; cost, $3,500; owner, A. S. Walsh, Madison St, near Reid Ave.; architect, C. Lincoln; builder, A. Miller.

Chicago.

BUILDING PERMITS.—Mrs. H. A. Brown, two-st'y dwell., 3221 Cottage Grove Ave.; cost, $4,000; architect, Wm. Strippelman.

A. Kramer, two-st'y dwell., 1298 West Harrison St.; cost, $3,000.

S. Nelson, three-st'y flats, 376 La Salle St.; cost, $12,000; architect, Halberg.

H. Krick, 3 two-st'y dwells., 3437-3439 Prairie Ave.; cost, $9,000; architect, W. Strippleman.

A. Lowka, three-st'y store and flats, 105 Cleaver St.; cost, $6,000.

W. H. Hoyt, 2 four-st'y dwells., 347-349 Indiana St.; cost, $12,000; architect, A. Smith.

J. Ruddy, 3 three-st'y dwells., 117-121 Centre Ave.; cost, $9,000.

J. O'Malley, 2 three-st'y dwells., 3217-3219 Dearborn Ave.; cost, $12,000; architect, J. J. Flanders.

H. Frese, three-st'y dwells., 443 Dayton St.; cost, $5,000; architect, G. Spohr.

F. A. Degolyer, one-st'y store, 692 Congress St.; cost, $2,500; architect, E. S. Denison.

C. H. Hall, two-st'y dwell., 1218 Jackson St.; cost, $3,000.

O. Gumbinger, three-st'y store and dwell., 293 Clybourne Ave., cost, $5,000; architect, J. Bruhors.

Freiberg Bros., remodel building, Twenty-second St.; cost, $9,000.

P. D. Gill, two-st'y church, 91-93 Cypress St.; cost, $14,000; architect, J. J. Egan.

H. Dammann, three-st'y store and dwell., 1198 Milwaukee Ave.; cost, $9,000; architects, Schaub & Berlin.

H. Stech, two-st'y dwell., 566 North Robey St.; cost, $4,000.

Mrs. M. E. J. Moody, two-st'y flats, 2430 Dearborn Ave.; cost, $5,000.

J. M. Sanders, 2 two-st'y stores and flats, 204-206 Colorado Ave.; cost, $4,200.

J. L. Campbell, 11 two-st'y dwells., Warren Ave.; cost, $50,000; architects, Edbrooke & Burnham.

G. P. Holmes, two-st'y dwell., 687 Washington Boulevard; cost, $10,000; architect, J. J. Flanders.

J. Sheehey, three-st'y store and dwell., 448 West Harrison St.; cost, $6,000; architect, H. Van Pelt.

M. Burgeson, three-st'y store and dwell., 242 Division St.; cost, $7,000; architect, S. Lenderoth.

G. Link, two-st'y dwell., 238 North State St.; cost, $3,000; architect, J. Huber.

E. A. Bassett, two-st'y dwell., 3546 Indiana Ave.; cost, $6,500; architect, H. Van Pelt.

L. Metz, four-st'y factory, 145 Ontario St.; cost, $8,000; architect, C. Berlin.

A. Jansen, three-st'y dwell., 154 Rumsey St.; cost, $4,000.

Grant Place Methodist Church, two-st'y church, 1001-1007 North Halsted St.; cost, $28,000; architect, W. A. Furber.

J. De Vos, two-st'y store and dwell., 211 Racine Ave.; cost, $3,000.

J. Hutton, two-st'y flat, 215 Seminary Ave.; cost, $3,000.

T. Crowley, 6 one-st'y cottages, 1235-1247 Fifteenth St.; cost, $6,000.

J. H. Broham, two-st'y flats, 281 Idaho St.; cost, $3,000.

J. Coughlan, two-st'y dwell., 82 Centre Ave.; cost, $4,000; architect, J. V. Wadskier.

A. Melta & Bro., two-st'y factory, Halsted St.; cost, $6,000.

J. L. Campbell., two-st'y dwell., 117 Leavitt St.; cost, $5,000; architect, W. Strippleman.

J. L. Campbell, two-st'y dwell., 263 Campbell Ave.; cost, $4,000; architect, C. A. Weary.

G. Farwell, two-st'y dwell., 1625 Prairie Ave.; cost, $10,000; architects, Treat & Foltz.

Mrs. E. Young, two-st'y dwell., 461 Warren Ave.; cost, $3,000.

J. Ran, 2 two-st'y dwells., 383-385 Marchfield Ave.; cost, $8,000; architect, T. M. Bell.

J. E. Young, two-st'y dwell., 97 McAllister Pl.; cost, $8,000; architects, Treat & Foltz.

J. & M. Wolff, 4 two-st'y dwells., 3149-3155 Calumet Ave.; cost, $20,000; architects, Edbrooke & Burnham.

Kansas City, Mo.

BUILDING PERMITS.—John J. Green, brick dwell and store, East Eighth St.; cost, $10,000.

Standard Implement Company, alteration business block, 1312-1314 West Eleventh St.; cost, $6,000.

Standard Implement Company, five-and-a-half-st'y business block, 1316-1318 West Eleventh St.; cost, $30,000.

P. Small, frame block, Montgall Ave.; cost, $4,000.

Dr. S. E. Trott, brick dwell., 1313 Troost Ave.; cost, $5,000.

M. E. Jones, frame dwell., cor. Garfield and Pendleton Aves.; cost, $3,700.

Mrs. E. J. Railsback, brick and stone block, cor. Thirteenth and Jefferson Sts.; cost, $24,000.

Irving Queal, brick block, Tracy Ave.; cost, $6,000.

Minneapolis, Minn.

BUILDING PERMITS.—P. G. Lameraux, two-st'y wood dwell., w s First Ave., bet. East Thirty-second and East Thirty-third Sts.; cost, $8,000.

P. G. Lameraux, two-st'y wood dwell., e s Nicollet Ave., bet. East Thirty-second and East Thirty-third Sts.; cost, $8,000.

P. G. Lameraux, two-st'y wood dwell., e s Nicollet Ave., bet. East Thirty-second and East Thirty-third Sts.; cost, $8,000.

P. G. Lameraux, two-st'y wood dwell., w s First Ave., bet. East Thirty-second and East Thirty-third Sts.; cost, $8,000.

P. G. Lameraux, two-st'y wood dwell. e s Nicollet Ave., bet. East Thirty-second and East Thirty-third Sts.; cost, $8,000.

P. G. Lameraux, two-st'y wood dwell., e s First Ave., bet. East Thirty-first and East Thirty-second Sts.; cost, $8,000.

Geo. H. Hoyt & Son, two-st'y wood dwell., s s East Fourteenth St., bet. Portland and Park Aves.; cost, $4,000.

Kenyon Bros., four-st'y brick store building, n s Washington Ave., bet. Thirteenth and Fourteenth Aves., s; cost, $12,000.

Woolf & Thomas, 4 three-st'y brick veneer tenements, w s Hennepin Ave., near Superior Ave., s; cost, $16,000.

Joel B. Clough, two-st'y wood dwell. and barn, n e cor. North Aldrich and Hawthorne Aves., n; cost, $4,000.

Calvin E. Brown, two-st'y wood dwell., e s Vine Pl., bet. West Nineteenth and West Twentieth Sts.; cost, $7,500.

Casey & Rand, two-st'y brick barn, e s Sixth Ave., bet. Tenth and Eleventh Sts., s; cost, $4,500.

Monroe and others, three-st'y brick store and flats, n e s Fifth St., bet. Hennepin and First Aves., n; cost, $30,000.

U. S. Government, U. S. Government building, s e cor. First Ave. and Third St., s; cost, $500,000.

New York.

CHURCH.—Rev. Jarvis Warden has filed plans for a one-st'y church, n s Eighty-sixth St., 336′ e Second Ave. The church, which is to be used as a temporary place of worship, will cost about $3,000.

APARTMENT-HOUSES.—On the s w cor. of Lexington Ave. and Eighty-first St., 2 handsome five-st'y basement apartment-houses, 40′ x 94′ 4″ and 40′ x 100′ 4″ of brick, brown-stone and terra-cotta, are to be built for Mr. Fred. Correll, at a cost of abt. $100,000; from plans of Mr. E. E. W. Schneider.

On the e s Second Ave., from Sixty-ninth to Seventieth St., 10 five-st'y brick and stone improved tenements, are to be built by Messrs. Higgins & Keating, at a cost of about $185,000; from plans of Messrs. A. B. Ogden & Son.

HOUSES.—On the s s Seventy-ninth St., 150′ w Ninth

Ave., 7 four-st'y and basement dwells., 22′ and 24′ x 60′, of brick and stone in different styles of architecture are to be built for Mr. Samuel Colcord; from designs of Mr. H. L. Harris; estimated cost about $200,000.

On the s s One Hundred and Twentieth St., 150′ e Ninth Ave., 8 three-st'y high stoop dwells., to cost abt. $75,000, are to be built from designs of Mr. D. T. Atwood.

STABLE.—For Mr. George Droste, five-st'y brick and stone front stable and warehouse, 25′ x 80′, is to be built on the n s Seventy-fifth St., 125′ w First Ave.; from designs of Mr. Julius Kastner.

STORE.—On the w s Third Ave., bet. One Hundred and Twenty-first and One Hundred and Twenty-second Sts., a large three-st'y store building, is to be built from plans of Mr. I. R. Thomas, for the Reformed Dutch Church of Harlem, who expect to spend $125,000 on the improvement.

ST. PATRICK'S CATHEDRAL.—The contract for completing the spires of St. Patrick's Cathedral, has been awarded to Messrs. H. B. Hannah and Hamilton & Mann, of Baltimore. The cost of the work will be about $200,000. The New York *Herald* says that after waiting six years for its spires, St. Patrick's Cathedral will have them before winter comes. Upon the foundations for the spires will be built octagonal lanterns in two tiers, and upon the upper one will rest the spires themselves, which will also be octagonal. When completed they will tower 330′ above the sidewalk.

BUILDING PERMITS.—*Thirty-first St.* n s, 225′ w Sixth Ave., four-st'y brick stable, brick front, flat gravel roof; cost, $20,000; owners, Ryerson & Brown, 21 East Twelfth St.; architects, D. & J. Jardine, 1262 Broadway.

Ninety-fourth St., n s, 175′ w Eighth Ave., 3 three-st'y brick and brown-stone dwells., brick and stone front, flat tin roof; cost, $20,000; owner, Thomas Auld, 232 West Fifty-fifth St.; architect, G. A. Schellinger, 128 Broadway.

Avenue B, s e cor. Eleventh St., 4 four-st'y brick stores and tenements, brick front, flat tin roofs; cost, $42,000; owner, Catharine Zimmerman, 13 West One Hundred and Thirty-fourth St.; architect, J. H. Valentine, 108 East One Hundred and Twenty-fifth St.

Avenue A, w s, bet. Seventy-ninth and Eightieth Sts., 9 five-st'y tenements, brick front, flat tin roof; cost, $130,000; owner, Francis Schnigg, 19 Avenue A.; architect, Herter Bros., 314 East Forty-third St.

Second Ave., e s, 250′ n Ogden Ave., (Highbridge), two-and-a-half-st'y frame dwell., peak shingle roof; cost, $5,000; owner, Augus McIntosh, Highbridge; architect, John E. Kirby, 115 Broadway.

Forty-first St., n s, 57′ w First Ave., 3 five-st'y brick tenements; brick front, flat tin roof; cost, $60,000; owners, Dawson & Archer, 4 Prospect Pl.; architects, Thom & Wilson, 1267 Broadway.

One Hundred and Nineteenth St., n s, 510′ w Fifth Ave., 3 three-st'y brick and brown-stone dwells., brown-stone front, flat tin roof; cost, $24,000; owner, E. O. Perrine, 308 West Twentieth St.; architect, J. E. Terhune, 218 West Thirty-seventh St.

One Hundred and Twentieth St., s s, 150′ e Ninth Ave., 8 three-st'y and basement brick buildings, flat tin roof; cost, $56,000; owners, Smith & Crowley, 335 Broadway; architect, D. J. Atwood, 535 Broadway.

Suffolk St., Nos. 130-138, 4 five-st'y brick tenements, brick and sandstone front, flat tin roof; cost, $60,000; trustee, J. Coleman Drayton, 120 Broadway, architect, George B. Bost, 15 Cortlandt St.

Union Ave., s e cor. Home St., three-st'y frame dwell., flat tin roof; cost, $5,000; owner, Herman Girke, 537 East Eleventh St.; architect, W. W. Gardiner, 1364 Washington Ave.

One Hundred and Fifth St., s s, 225′ e Tenth Ave., five-st'y brick flat, flat tin roof; cost, $30,000; owner, Louisea Schnoering, 338 Manhattan Ave., Brooklyn; architect, Wm. Graul, 12 Stanton St.

One Hundred and Fifth St., s s, 255′ e Tenth Ave., five-st'y brick flat, flat tin roof; cost, $22,000; owner, Louisea Schnoering, 338 Manhattan Ave., Brooklyn; architect, Wm. Graul, 12 Stanton St.

Union Ave., e s, 250′ s Home St., 9 three-st'y and basement frame dwells., flat tin roof; cost, $31,500; owner, Herman Gierke, 537 East Eleventh St.; architect, W. W. Gardiner, 1364 Washington Ave.

One Hundred and Forty-fifth St., n s, n w cor. First Ave., 9 three-st'y and basement brick and stone buildings, 1 four-st'y, flat tin roofs, brick front; cost, $90,000; four-st'y cost, $15,000; owner, P. J. O'Brien, One Hundred and Forty-third St., bet. Seventh and Eighth Aves.; architect, W. B. Anderson, 102 South Fifth Ave.

West Fiftieth St., No. 450, five-st'y brick tenement, brick and brown-stone front, flat tin roof; cost, $15,000; owner, Michael Lapp, 457 West Fiftieth St.; architect, R. H. B. Schneider, 15 Courtlandt St.

ALTERATIONS.—*St. Mark's Pl., No.* 17, four-st'y and basement brick dwell., brick and marble front to be altered, the basement to be a lecture room, first st'y a chapel, upper stories dwell.; cost, $3,000; owner, Rev. Jacob Freshman, 25 Seventh St.; architect and builder, L. H. Williams, 2 West Fourteenth St.

Madison Ave., No. 315, five-st'y brick dwell., stone front, to have an extension, 2 stores to be built of brick, owner, Mrs. M. R. Watson, 315 Madison Ave.; architect, W. H. Clum, Plainfield, N. J.

Philadelphia.

BUILDING PERMITS.—*Twenty-sixth St.*, cor. Oxford St., three-st'y store, 17′ x 47′; Wm. H. Rea & Son, contractors.

Melrose St., w Fifty-seventh St., two-st'y stable, 17′ x 40′; Jno. E. Sickel, contractor.

Church St., w Twenty-seventh St., two-st'y stable, 18′ 6″ x 30′; Heibach & Auchlen, contractors.

Mt. Pleasant St., w Twenty-seventh St., two-st'y dwell., 16′ 4″ x 40′; Helbach & Auchlen, contractors.

Ridge Ave., n e cor. Noble St., five-st'y store, 55′ x 68′; Lewis & Bro., owners.

Laurel St., w New Market St., ice-house, 17′ x 40′; Wm. Moland & Son, owners.

Comarow St., w Pechin St., 2 two-st'y dwells., 16′ x 42′; L. Rowland, contractor.

Stenton Ave., Nos. 4 *and* 6, 2 three-st'y dwells., 17′ x 32′; Edward Welch, contractor.

Warren St., s e cor. Thirty-sixth St., three-st'y dwell., 27′ x 44′; Martin Christ, contractor.

Hazzard St., e Kensington Ave., 4 two-st'y dwells., 15′ x 30′; J. I. Bradfield, owner.

Jefferson St., No. 423, three-st'y ice-house; August Vollmer, owner.

Spencer St., w Thirty-seventh St., 6 three-st'y dwells., 15′ x 47′; Jacob Gloase, contractor.

Twenty-third St., s Washington St., two-st'y shop; Jas. McHenry, owner.

Bridge St., cor. Richmond St., two-st'y store, 17′ x 50′; Amos Linn, owner.

South St., w Sixty-first St., 3 three-st'y dwells., 15′ x 35′; Jacob Zell, owner.

Noble St., w Ninth St., 2 three-st'y dwells., 15′ x 40′; P. Thompson, contractor.

Twenty-third St., n w cor. Christian St., stable, 46′ x 130′; C. Lafferty, owner.

Centre St., bet. Wilson St. and R. R., 2 two-st'y dwells., 16′ x 45′; W. A. Ford, contractor.

Seybert St., w Twenty-third St., 4 two-st'y dwells., 14′ x 28′; Geo. Gibson, owner.

Ridge Ave., cor. Stiles St., three-st'y store; Wm. Harrison, contractor.

South Fourth St., No. 922, three-st'y shop; Geo. C. Jackson, owner.

Main St., w Robinson St., 3 three-st'y dwells., Robt. Manley, owner.

Seventeenth St., n Venango St., 11 two-st'y dwells.; J. B. Carr.

Federal St., No. 1227, three-st'y dwell., 17′ x 30′; Rea & Riley, contractors.

Federal St., No. 1227, two-st'y stable, 17′ x 125′; Rea & Riley, contractor.

Eighth St., above Dauphin St., three-st'y dwell., 20′ x 45′; Jno. Weible.

St. Louis.

BUILDING PERMITS.—Sixty-seven permits have been issued since our last report, fifteen of which are for unimportant frame houses. Of the rest, those worth $2,500 and over are as follows:—

N. C. Harris, agent, 2 adjacent two-st'y brick dwells.; cost, $5,500; Gravel & Weber, architects; S. C. McCormack & Son, contractor.

Mrs. M. A. Gelivicks, two-st'y brick dwell.; cost, $3,000; G. W. Pipe, architect.

Mrs. L. Trafts, two-st'y brick dwell.; cost, $2,800; S. Stricker, contractor.

John Ganahl, altering two-st'y brick dwell.; cost, $4,000; Geo. I. Harnett & Co., architects; Paulus & Weidermulier, contractors.

F. Zimmermann, two-st'y brick dwell.; cost, $3,500; A. Beinke, architect; C. Linnenkohl & Co., contractors.

Wm. Keane, one-and-a-half-st'y brick boarding stable; cost, $2,500; J. H. O'Brien, contractor.

Casey & Leeson, two-st'y brick shirt factory; cost, $2,500; Chapman & Thursby, contractors.

A. W. Davis, two-st'y brick dwell.; cost, $2,500; Marlatt & Johnson, contractors.

W. Jennison, two-st'y brick tenement; cost, $2,800; Wm. Cochran, contractor.

Julius Walsh, Pres., one-st'y brick car stable; cost, $2,200; Wm. Cochran, contractor.

J. D. Galvin, two-st'y brick dwell.; cost, $3,500; T. F. Marley, contractor.

E. Schiwitz, two-st'y brick dwell.; cost, $3,400; Henry Reimer, contractor.

Alex. Dafferty, two-st'y brick dwell.; cost, $2,800; Ed. Mackey, contractor.

Wm. Stuckelmeyer, two-st'y brick tenement; cost, $2,810; G. Ibers, contractor.

Wm. Kempel, two-st'y brick dwell.; cost, $2,500; O. Koenig, architect; A. H. Haeseler, contractor.

Ed. Keller, two-st'y brick dwell.; cost, $3,900; J. L. Kuhnert, contractor.

Miss Mary Slattery, two-st'y brick dwell.; cost, $3,100; A. Wagner, contractor.

St. Paul, Minn.

BUILDING PERMITS.—Two-st'y frame store, n s Decatur St., bet. Bedford and Preble Sts; cost, $2,000.

Two-st'y frame dwell., w s Walker St., bet. Taylor St. and St. P. & M. & M. R. R.; cost, $1,800; owner, John Roland.

Two-st'y frame dwell., s s Payne St., bet. Farquier & R. R.; cost, $1,000; owners, Kate and Bridget Barrett.

Two-st'y brick store and offices, s s East Fourth St., bet. Robert and Minnesota Sts.; cost, $2,000; owner, C. F. Clark.

Five-st'y brick business block of stores, w s Sibly St., bet. Fifth and Sixth Sts.; cost, $25,000; owner, Manrice Lyons.

Three-st'y addition to Madison School-House, n s Martin St., bet. Wabasha and Park Ave.; cost, $11,700; owner, Board of Education.

Two-st'y frame dwell., e s State St., bet. Robie and Winnifred Sts.; cost, $5,000, owner, E. R. Byrant.

Two-st'y frame dwell., s s Fuller St., bet. Virginia and Western Ave.; cost, $2,475; owner, Wm. M. A. Smith.

Toledo.

IN GENERAL.—The local building outlook is only fair, and the season now closing shows moderately gratifying results. Too many would-be contractors are ever in the field, consequently there is too much hasty and careless work done. There seems to be too many competitors (such as they are) in building all over the country, and the consequence is the standard of work and taste is not elevated or advanced nearly as rapidly as it would seem it ought to be.

ASYLUM.—The large asylum contract here by Malone & Co. is being vigorously pushed by them. It is hoped that the close of 1886 will see all of the upwards of forty buildings very near completion.

STABLES.—*Woodruff Ave.*, brick stable, for L. S. Baumgardner; cost, $3,000; N. B. Bacon, architect; Gross & Monroe, builders.

Madison St., brick stable for S. C. Reynolds; cost, about $4,500; N. B. Bacon, architect; Jno. W. Lee, builder.

Ashland Ave., stables for J. H. Bowman; cost, about $1,800; N. B. Bacon, architect.

HOUSES.—*Franklin Ave.*, two-st'y frame dwell., for M. Neuhausel; cost, about $4,500; E. O. Fallis & Co., architects.

Washington St., cor. Seventeenth St., two-st'y frame dwell. and stable for Dr. O. S. Brigham; cost, $5,000; N. B. Bacon, architect; H. E. Brown, builder.

Jefferson St., cor. Tenth St., three-st'y brick dwell. for Dr. Melchers; cost, about $8,000; A. Liebold, architect.

Illinois St., block of 5 two-st'y frame dwells., for J. W. Myers; cost, about $7,500; A. Wales, builder; N. B. Bacon, architect.

Seventeenth St., cor. Jefferson St., three-st'y frame dwell. for Dr. H. A. Chase; cost, about $6,500; N. B. Bacon, architect; H. E. Brown, builder.

General Notes.

BIRMINGHAM, ALA.—The following building permits have been issued since our last report:—

Two-st'y frame dwell. for Robert Jennison, Esq.; cost, $5,500; H. Wolters, architect.

Four-st'y brick business house, for J. T. Wilson; cost, $14,000; Oliver Marble & Son, architects.

Two-st'y frame dwell. for Geo. Morris; cost, $3,000; T. C. Thompson & Co., builders; Chas. Wheelock, architect.

Two-st'y cast-iron front business house for Walker & Mudd; cost, $4,000; T. C. Thompson & Co., builders; Chas. Wheelock, architect.

Birmingham public school building, two-st'y of brick and stone; cost, $9,500; Chas. Wheelock, architect.

HANOVER, N. H.—Miss Kate Sanborn asks the graduates of Dartmouth to contribute money for building an alumni art gallery and memorial hall here.

HARTFORD, CONN.—The South school building committee have made preparation for letting contracts and getting the work on the building fairly started.

HUTCHINSON, KAN.—Everything concerning the locating of the reformatory here is now completed. The architect will have the plans and specifications in about three weeks, when work will be commenced on the excavation for the basement.

LYNN, MASS.—General Lander Post No. 5, of Lynn, has voted to appropriate $25,000 for the erection of a new building on Andrews Street.

NASHUA, N. H.—The city goverment have voted unanimously to exempt from taxes the proposed new building for the Moody & Estabrooks shoe manufactory for ten years.

RICHMOND, VA.—An interesting question has arisen in the Treasury Department in regard to the custom house at Richmond, Va. An act of Congress, approved February 26, 1885, appropriates $100,000 for the enlargement of the building. The sundry civil bill, which was approved March 3, 1885, appropriates $50,000 for the same purpose. The Supervising Architect has asked for instructions in the matter before prepairing plans and specifications for the buliding. He is undecided as to whether he shall prepare designs for a building to cost $100,000 or for a building to cost $50,000. The question has been referred to the legal officers of the department for an opinion.—*Goverment Advertiser.*

TECUMSEH, MICH.—Two-st'y frame dwell., for Mrs P. R. Adams; cost, about $6 000; N. B. Bacon, architect, Toledo, O.; T. H. Crane, builder.

UPPER SANDUSKY, O.—Two-st'y frame dwell. for T. E. Grissel; cost, about $3,000; N. B. Bacon, architect, Toledo, O.

WAKEFIELD, MASS.—A number of gentlemen interested in real estate have purchased what is known as the Nash farm, on the west side of the Boston and Maine Railroad and south of the Greenwood Station in Wakefield, and propose laying it out into house lots. The farm comprises about one hundred and sixty acres, the location is one of the best as to prospect and healthy surroundings, and there is every reason to anticipate a flourishing settlement. There will probably be built about fifty houses, and upon their completion a new station will be placed at this location by the Maine Railroad. The wood on the farm will furnish a great portion of the lumber, and already a large saw mill has been erected upon the grounds and a gang of men are busily at work. Thirty thousand feet of boards have been sawed, and it is thought that the total outcome will be about 400,000 feet of boards and about four hundred cords of wood.—*Boston Journal.*

WOODBURY, N. J.—Corner of Broad Street and Delaware Ave., court-house for Gloucester County, 65′ 6″ x 92′ 9″, will be built of stone, to be fire-proof, heated and ventilated by steam, will contain county offices, court-rooms, etc. This design was selected by the Board from fifteen competitive designs from architects in surrounding States; Hazlehurst & Huckel, architects.

Bids and Contracts.

BALTIMORE, MD.—The following is an abstract of the bids for iron beams for the post-office:—

H. A. Ramsey & Son, Baltimore, Md., $3,745.
Dearborn Foundry Company, Chicago, Ill., $3,980.
Bartlett, Hayward & Co., Baltimore, Md., $4,100.
Snead & Co. (Iron Works, Louisville, Ky., $4,137.
Phœnix Iron Company, Trenton, N. J., $4,635.
Haugh, Ketcham & Co., Indianapolis, Ind., $4,865.

H. A. Ramsey & Son, have been awarded the contract for iron beams, etc., for the fourth-st'y floor of the post-office.

CLEVELAND, O.—The following is an abstract of the proposals for supplying standard and special furniture required for the United States custom-house building:—

Edward E. Swiney, Chicago, Ill., $11,937.05.
H. J. Fitzpatrick & Co., New York, $10,759.66.
A. H. Andrews & Co., Chicago, Ill., $9,212.55.
Tomlinson & Carsley, Chicago, Ill., $443.51.
Ernest Feige, East Saginaw, Mich., $10,017.75.
The Robert Mitchell Furniture Company, Cincinnati, O., $9,963.55.
Phœnix Furniture Company, Grand Rapids, Mich., $10,690.90.
Pullman's Palace Car Company, Pullman, Ill., $8,702.01 (*accepted*).
Thomas Kane & Co., Chicago, Ill., $9,500.

CONCORD, N. H.—The contract for brick masonry of basement and superstructure of the post-office and court-house has been awarded to Meade, Mason &

The American Architect and Building News.

PUBLISHED EVERY SATURDAY BY

TICKNOR & COMPANY,

211 TREMONT ST., BOSTON, MASS.,

For The American Architect and Building News Co.

[No change in editorial management.]

Regular edition; $6.00 per year; six months, $3.50
Gelatine edition; $7.00 per year; six months, $4.00
12 Monthly Numbers, $1.75.

☞ Payment should be made to Ticknor & Co. direct, either by draft or post-office order.

Advertising Agents.

Boston and Philadelphia: —
I. Henry Paige, 211 Tremont St., Boston.
New York City: —
H. M. Carleton, 21 Park Row.

New Advertisements.

H. W. JOHNS M'F'G CO. (New York, N. Y.), Asbestos. Page xi.
BRICK & STONE WATER-PROOFING CO. (New York, N. Y.), Water-Proofing. Page i.
YALE & TOWNE M'F'G CO. (Stamford, Conn.), House Trimmings. Page xx.
GEORGE F. TAYLOR (New York, N. Y.), Sliding-Door Rail. Page xvi.
USEFUL PUBLISHING CO. (New York, N. Y.), Directory. Page xii.
THE COMBINATION CO. (Norwich, Conn.), Steam Heating. Page vi.

BUILDING INTELLIGENCE

Bids and Contracts. (*Continued.*)

Co., at their bid of $22,000. This firm also gets the granite stone-work at their bid of $62,000.

DOVER, N. H.—The Dover, N. H., Improvement Association have awarded the contract for building the new shoe factory to Hiram F. Snow for $21,800.

FORT WAYNE, IND. — The following is a synopsis of the bids on iron beams, girders, etc., for second and third st'y floors of the court-house: —

L. M. Morris, Pittsburg, Pa., $3,934.
Haugh, Ketcham & Co., Indianapolis, Ind., $3,-230.26.
Terre Haute Car and Manufacturing Co., Terre Haute, Ind., $3,536.26.
A. & P. Roberts & Co., Philadelphia, Pa., $4,-211.82.
Dearborn Foundry Co., Chicago, Ill., $3,433.

WANTED.

DRAUGHTSMAN. — Wanted a thoroughly competent and experienced draughtsman for architectural iron-work; permanent and responsible position to the right man. Address with references, J. C., P. O., Station F., New York.

BUILDING INTELLIGENCE.

Marshall Foundry and Construction Company, Pittsburg, Pa., $3,332.76.
Snead & Co., Iron Works, Louisville, Ky., $4,331.

MINNEAPOLIS, MINN. — The stone-yards of Davidson & Sons, of Chicago, are furnishing the marble for the tiling and wainscoting of the new Home Insurance Co.'s building. It is a $20,000 contract.

POUGHKEEPSIE, N. Y.—The contract for joiner-work on the court-house has been awarded to Moore & Co., of Syracuse, at $7,238.

SPRINGFIELD, ILL.—The commissioners have awarded the contracts for the completion of the State House as follows: —

Stone and brick work, Hallowell Granite Co., Chicago, $94,055.92.
Marble work, Davidson & Son, $47,808.
Granite work, Davidson & Son, Chicago, $96,200.
Carpenter work, Cudell & Meissner, Chicago, $12,-336.65.
Plastering, Joseph Eastman, Chicago, $8,375.
Plumbing, Beaver, Wight, Wetmore & Co., Chicago, $2,400.
Iron-work, H. A. Streetor, Chicago, $27,886.51.
Bronze work and railings, Poulson & Eger, New York, $15,000.

The aggregate of these bids is $304,062.08. From this sum take $15,012.83, which will be expended on the stylobate, and which will be paid for as repairs by a separate fund under the direction of the Secretery of State, the amount that the commissioners will have to expend on the above contracts is $289,-049.25, or about $242,000 less than the $541,000 appropriated. This will be required for steam-fitting, frescoing, elevators, ventilating, laying out and ornamenting the grounds, etc. The contracts are looked upon as very favorable for the State, and the commissioners say they will have enough money to complete the building in fine style,

PROPOSALS.

TERRA-COTTA FLOOR ARCHES, ROOF TILES, ETC. [At Columbus, O.]

OFFICE OF SUPERVISING ARCHITECT,
TREASURY DEPARTMENT,
WASHINGTON, D. C., September 15, 1885.

Sealed proposals will be received at this office **until 2 P. M., on the 5th day of October, 1885,** for the floor arches, roof tiles, etc., required for the public buildings at Columbus, O., Fort Wayne, Terre Haute, Ind., Hannibal and Jefferson City, Mo., Harrisonburg, Va., Pensacola, Fla., Peoria and Quincy, Ill., Syracuse, N. Y., Dallas, Tex., and Baltimore, Md., in accordance with drawings and specifications, copies of which may be obtained at this office.

Bids must be accompanied by a certified check for $500.

M. E. BELL,
508 Supervising Architect.

AS a protection to our customers against worthless imitations, we publish a fac-simile of our TRADE-MARK LABEL, which will be found on every package of H. W. Johns Liquid Paints.

COPYRIGHT, 1885, BY H. W. JOHNS.

These Paints are in every respect strictly first-class, being composed of the best and purest materials obtainable. They have a larger sale than any other paints made in this country or abroad, and although they cost a trifle more per gallon than any others, they will do more and better work for the same amount of money, owing to their wonderfu covering properties, while their superior durability renders them the most economical paints in the world.

Sample Cards and our Illustrated Pamphlet, "STRUCTURAL DECORATION," sent free by mail.

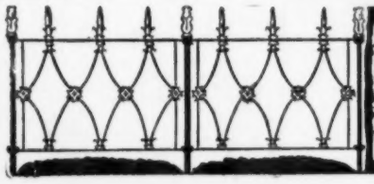
H. W. JOHNS MANUFACTURING CO.,

SOLE MANUFACTURERS OF H. W. JOHNS'S

GENUINE ASBESTOS ROOFING, BUILDING-FELT, STEAM-PACKING, BOILER-COVERINGS, FIRE-PROOF PAINTS, CEMENTS, ETC. Descriptive Price-List free by Mail.

87 MAIDEN LANE, NEW YORK.

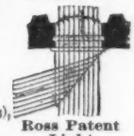
170 N. 4th Street, Philadelphia, Pa. 175 Randolph Street, Chicago. Billiter House, Billiter Street, London.



WE NOW OFFER this pattern of our first class Composite Wrought Iron Railing, at the rate of $1.50 per lineal ft. 3 ft. high. The Chilled Iron Ornaments are poured on to the Wrought Iron Rods, welding the panel into one piece without joints or crevices for rust to enter. It is made to set on stone or to go into ground. Our Railings are everlasting and one of them is worth two of any other kind. Composite Iron Works Co. 83 Reade St., N. Y.

Sidewalk
— AND —
VAULT
LIGHTS.

Sole Manufacturers of the



Ross Patent Light.

FLOOR and ROOF
LIGHTS.

DAUCHY & CO.,

125 & 127 Indiana St., (near Wells),
CHICAGO, ILL.

HOWLAND & CHURCHILL
27 SUMMER ST.
AGENTS FOR BOSTON.

ANDIRONS
— AND —
FIRE-SETS.

Orders for special designs of Gas-Fixtures and Brass-Work solicited

GAS FIXTURES, BRONZES &c

PROPOSALS.

SEWER-PIPE. [At Avondale, O.]

CINCINNATI, O., August 25, 1885.

Sealed proposals will be received at the office of the undersigned, Room 23, Sinton Building, Fifth and Vine Streets, Cincinnati, O., **until 12 o'clock, M., of Tuesday, September 22, 1885,** for furnishing and delivering at Avondale, Hamilton County, O., about

1,900 feet of 21-inch sewer-pipe,
1,900 feet of 24-inch sewer-pipe,
400 feet of 21-inch iron pipe,

according to plans on file with the Clerk of the Board of Sewerage Commissioners.

The Council reserves the right to reject any or all bids.

Bidders to endorse their names and address upon the outside of the envelopes containing their bids.

Each bid to be accompanied by two disinterested sureties.

Bidders to use the blank forms, as none others will be received.

Plans and specifications and forms of proposals can be obtained at the office of the undersigned or at the office of Anderson & Hobby, 68 and 69 Johnston Building, Cincinnati, O.

By order of the Board of Sewerage Commissioners.

W. ELLWOOD WYNNE,
508 Clerk.

FIRE-PROOF VAULTS. [At Trenton, N. J.]

STATE OF NEW JERSEY,
TRENTON, September 7, 1885.

The commission appointed to rebuild the burned portion of the New Jersey State Capitol will receive sealed proposals **until the 22d inst.,** for the construction of fire-proof vaults, foundation walls, and all the necessary mason-work and iron-work to completely finish the basement story of a building about 160 feet long and 60 feet deep.

Working plans and specifications may be seen on and after the 9th inst., at the office of L. H. Broome, Esq., architect, No. 47 Montgomery St., Jersey City, N. J.

The successful bidder will be required to give satisfactory bonds, in double the amount of the contract, and the right is reserved to reject any or all bids which are not deemed for the interest of the State.

Proposals must be addressed to the undersigned, and must be delivered at the office of the State Treasurer, in Trenton, N. J., before 12 o'clock, noon, on Tuesday, September 22, 1885.

By order of the Commission.

JOHN J. TOFFEY,
508 Secretary.

LUMBER. [At Washington, D. C.]

U. S. NAVY PAY OFFICE,
WASHINGTON, D. C., September 2, 1885.

Sealed proposals, in duplicate, endorsed "Proposals C. & R. Supplies," will be received at this office **until noon, October 2, 1885,** for the following articles to be delivered at the construction and repair department of the Navy-Yard, Washington, D. C., within ten days from date of order, subject to usual official inspection and conditions, and free of all expense to the Government, viz.: —

Requisition No. 10, Class A, yellow pine logs, white pine logs, and spruce bars.
Class B, white pine plank and boards.
Requisition No. 11, 500 tons bituminous coal.

To be awarded by classes and requisition.

Bids will be received and considered only "from manufacturers and regular dealers in the articles which they offer to supply," and the right is reserved to reject any or all bids and to waive defects.

Schedules and blank proposals to be had at this office, and all necessary information at Navy Yard.

Responsible persons or firms must guarantee the prompt and faithful execution of contract, with bond, etc., and the competency of the guarantors must be certified to before a notary or other public officer.

THOS. H. LOOKER,
Pay Director, U. S. Navy,
509 Navy Pay Agent.

PROPOSALS.

COUNTY LAUNDRY. [At Dayton, O.]

The County Commissioners of Montgomery County, O., will receive proposals at Dayton, O., **until the 22d,** for the erection of a new laundry building at the County Infirmary. For particulars, address

508 JOHN W. TURNER, Auditor.

IRON ROOF. [At Peoria, Ill.]

OFFICE OF SUPERVISING ARCHITECT,
TREASURY DEPARTMENT,
WASHINGTON, D. C., September 10th, 1885.

Sealed proposals will be received at this office **until** 2 P. M., **on the 29th day of September, 1885,** to furnish and put in place the iron roof, etc., of the post-office, court-house, etc., building, at Peoria, Ill., in accordance with drawings and specification, copies of which and any additional information may be had on application at this office or the office of the superintendent.

Bids must be accompanied by a certified check for $300. M. E. BELL,

508 Supervising Architect.

EXCAVATION AND CONCRETE FOUNDATIONS. [At Leavenworth, Kans.]

OFFICE OF THE POSTMASTER, POST-OFFICE,
LEAVENWORTH, KANS., September 9, 1885.

Sealed proposals will be received at this office **until** 12 M., **on the 24th day of September, 1885,** for all the excavation and concrete foundations required for the court-house, post-office, etc., building in this city, in accordance with drawings and specifications, copies of which may be seen, and any additional information obtained on application at this office.

FRANK T. LYNCH,

508 Postmaster.

SEWER. [At Cleveland, O.]

CITY CIVIL ENGINEER'S OFFICE,
CLEVELAND, O., August 27, 1885.

Sealed proposals will be received at the office of the Board of Improvements, **until 12 o'clock,** M., **September 25, 1885,** for the construction of a sewer and appurtenances in Quincy Street, between Wilson and Giddings Aves.

Plans and specifications may be seen, and blank proposals can be obtained at the office of the City Civil Engineer, after September 17, 1885.

Each proposal must contain the full name of the party or parties making the same, and all parties interested therein, and must be accompanied by a bond of $500, with good and sufficient surety that if the same is accepted, a contract will be entered into.

No proposal will be entertained unless made on the blanks furnished by the engineer.

The city reserves the right to reject any or all bids.

By order of the Board. C. G. FORCE,

508 City Civil Engineer.

COURT HOUSE. [At St. Paul, Minn.]

COUNTY AUDITOR'S OFFICE,
RAMSEY COUNTY, MINN.
ST. PAUL, MINN., September 7, 1885.

Notice is hereby given, and advertisement hereby made, for proposals or bids for all that part of the work and of the material for the building and construction of the court house and city hall, located on Court House square (the same being block twenty (20) of St. Paul Proper), in the City of St. Paul, County of Ramsey, State of Minnesota, hereinafter stated, this is to say: All the work and all the material; including all iron, slate, terra-cotta, copper, flushings, asphalt, and other materials whatsoever required to build, construct, complete and fully finish the entire roof of said Court House and City Hall; also, all the work and all the material required to build, construct, complete and fully finish all Iron Staircases throughout said building, in accordance with the drawings and specifications, copies of which may be seen, and any additional information obtained, at the office of E. P. Bassford, Architect, Room 28, Gilfillan block, St. Paul, Minnesota, and to have said materials furnished, and to construct, and build said roof and said Iron Staircases, and have the same fully completed and finished on or before the 31st day of December, A. D. 1886. Such proposals or bids will be received at the office of the County Auditor for said Ramsey county, in said city of St. Paul, **until the twentieth (20th) day of October, 1885, at four (4) o'clock,** P. M.

All bids to be addressed to the Chairman of the Court House and City Hall special commission.

The right is hereby reserved to reject all bids of incompetent or irresponsible persons, and all such bids as may be unreasonable. No bid will be received, or considered unless accompanied by the bond of the bidder or bidders with the satisfactory sureties in the penal sum of ten thousand ($10,000) dollars conditioned that if the bid shall be accepted and the contract awarded to the bidder or bidders, he, or they will enter into, and execute such contract, or by deposit with the commission of a check for the sum of five thousand ($5,000) dollars drawn to the order of James O'Brien, secretary, on some bank in the city of St. Paul, duly certified in lieu of such bond,

No bid will be accepted unless the bidder or bidders, will enter into such bond, and give such security for the performance of his or their contract, as may be required by the commission and approved by three-fourths vote of the county commissioners of Ramsey county, Minnesota, and the common council of the city of St. Paul, of the members elect in joint session.

By order of the Court House and City Hall Special Commission.

JAMES O'BRIEN,

County Auditor and Secretary of Special Commission. 509

No. 29 The Latest, the Lowest in Price, and the most accurate Directory of the Architects in the United States and Territories ever published.

Bound in Board. Sent free on receipt of $1.00, by the

USEFUL PUBLISHING COMPANY, - 1293 Broadway, New York.

Call the attention of the Architect to your production and be assured that if it has **MERIT** you have also reached the Owner, Builder, Mason, Decorator, etc.

PROPOSALS.

PIPE-SEWERS. [At Columbus, O.]

Sealed proposals will be received at the office of the City Clerk, in Columbus, O., **until Monday, October 5, 1885, at 12 o'clock, noon,** for furnishing materials and performing the following work, to wit:

In certain avenues, contemplated alleys, streets and alleys in sub-sewer district B of Main Sewer District No. 2. A 24-inch pipe-sewer; a 20-inch pipe-sewer; an 18-inch pipe-sewer; a 15-inch pipe-sewer.

JOHN GRAHAM,

509 City Civil Engineer.

WATER-PIPES AND DRAINS. [At San Antonio, Tex.]

HEADQUARTERS DEPARTMENT OF TEXAS,
OFFICE CHIEF QUARTERMASTER.
SAN ANTONIO, TEX., August, 13, 1885.

Sealed proposals in triplicate, subject to usual conditions, will be received at this office **until 12 o'clock, noon, on the 28th day of September, 1885,** at which time and place they will be opened in the presence of attending bidders, for furnishing and laying at San Antonio, Tex., of about 3,390 lineal feet each of water and drain pipes, according to plans and specifications on file in this office, which will be shown, blank proposals furnished and full information as to manner of bidding, and terms of contract given on application.

The Government reserves the right to reject any or all bids.

Envelopes containing proposals should be marked: "Proposals for Water Pipes and Drains," and addressed to the undersigned.

J. G. C. LEE,

508 Major and Chief Quartermaster.

BRASS TUBES.

U. S. NAVY PAY OFFICE, September 1, 1885.

Proposals, in duplicate, sealed, and endorsed on envelope "Bids for Engineer's Supplies," will be received at this office from regular dealers or manufacturers only **until 12 o'clock,** M., **October 1, 1885,** for the following supplies, of best quality, to be delivered with twenty days from date of award, in the Mare Island Navy Yard, free of expense to the Government, and subject to the usual condition and inspection, viz.:

BUREAU OF STEAM-ENGINEERING.

Requisition No. 3, brass tubes.

Blank forms for proposals, and schedules for the articles required, will be furnished upon application at this office, and all necessary information at the Navy Yard.

Two responsible guarantees are required that a formal contract will be executed with bond for the prompt and faithful delivery of the articles awarded, and the competency of the guarantors certified to before a notary or other public officer.

The right is reserved to reject any or all bids that may not be deemed advantageous to the Government, and to waive defects.

W. W. WILLIAMS,

Pay Director, U. S. Navy.

STEAM-HEATING. [At Leavenworth, Kans.]

THE NATIONAL HOME FOR
DISABLED VOLUNTEER SOLDIERS,
LEAVENWORTH, KANS., August 26, 1885.

Sealed proposals will be received at the Planters House in this city, **until 12 o'clock, noon, Saturday, September 26, 1885,** for furnishing all material (except the boilers, which are to be furnished and delivered at the boiler-house), and setting the boilers in place, complete the steam-fitting, the steam-heating, the gas-fitting, the plumbing, and the sewer-pipes and connections required in the buildings, now being erected at the Home.

The bids must be made separately for each branch of the work, in a lump sum for each, but may be bid for also in a lump sum for the entire work.

Plans and specifications may be seen at the office of Carr & Grodavent, architects, Leavenworth, Kans.

The right is reserved to reject any or all bids.

GEN. W. B. FRANKLIN, President.

E. F. BROWN, Inspector-General. 508

DECORATIONS. [At Lansing, Mich.]

LANSING, MICH., August 3, 1885.

Notice is hereby given that under the provisions of Act No. 140 of the session laws of 1885, designs and proposals for decorating the walls and corridors of the capitol at Lansing are solicited, and will be received by the secretary at the office of the Board of State Auditors **until 9** A. M., **on Wednesday, September 30, next.** Bids may be made in the following manner, each to be accompanied by sketches or designs showing as clearly as may be the plan upon which the work is proposed to be finished:—

Bid No. 1 for Senate Chamber and House of Representatives.

Bid No. 2 for Supreme Court-room.

Bid No. 3 for rotunda and front corridor on first floor.

Bid No. 4 for Governor's reception room.

Bid No. 5 for all of above mentioned.

The whole amount to be expended on the work is limited to $23,000.

Each bid must be accompanied by a bond of the bidder or bidders to the people of the State of Michigan in the penal sum of one thousand dollars, to be approved by any member of the commission conditioned that if any contract be awarded to him or them, he or they will, within a reasonable time to be designated by said board, enter into an agreement with said board, and furnish a bond to be approved by said board conditioned for the prompt and faithful performance of the contract so awarded.

Blank form of both bids and bonds to accompany them, and the act of Legislature authorizing the work will be furnished on application to the secretary.

The board reserves the right to reject any and all bids or design. R. A. ALGER, Chairman.

T. M. WILSON, Secretary. 508

SEWER-PIPE. [At Cincinnati, O.]

CINCINNATI, August 25, 1885.

Sealed proposals will be received at the office of the undersigned, Room 23, Sinton Building, Fifth and Vine Sts., Cincinnati, O., **until 12 o'clock,** M., **of Tuesday, September 22, 1885,** for furnishing and delivering at Avondale, Hamilton Co., O., about

1,900 feet of 21-inch sewer-pipe.
1,900 feet of 24-inch sewer-pipe.
400 feet of 21-inch iron-pipe.

According to plans on file with the Clerk of the Board of Sewerage Commissioners. The Council reserves the right to reject any or all bids.

Bidder to indorse their names and address upon the outside of the envelopes containing their bids.

Each bid to be accompanied by two disinterested sureties.

Bidders to use the blank forms, as none others will be received.

Plans and specifications and forms of proposals can be obtained at the office of the undersigned, or at the office of Anderson & Hobby, 68 and 69 Johnston Building, Cincinnati, O.

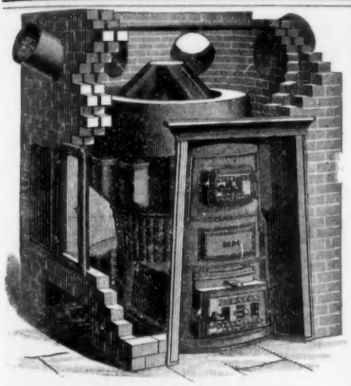
By order of the Board of Sewerage Commissioners.

508 W. ELLWOOD WYNNE, Clerk.

Classified Advertisements.

[Advertisers can be indexed only under a single head free of charge.]

Architects' Materials. PAGE
Frost & Adams, Boston iii
Wadsworth, Howland & Co., Boston iii
Annunciators.
Edwards & Co., New York iv
W. R. Ostrander & Co., New York ix
Western Electric Co., New York & Chicago ... viii
Asbestos Felt.
The Asbestos Packing Co., Boston & New York xix
Asbestos Paint.
H. W. Johns M'f'g Co., New York xi
Asphalt. Henry E. Bradbury, New York .. x
New York Mastic Works i
Bell Founders.
H. McShane & Co., Baltimore iv
Blind-Awnings.
F. A. North & Co., Boston ix
Blinds (Sliding).
Wm. Willer, Milwaukee, Wis. ix
Boiler-Covering.
Shields & Brown, Chicago vii
Books and Journals.
Wm. T. Comstock, New York viii
Tecknor & Co. Boston xvii
Useful Publishing Co., New York xii
Brass Goods.
Manhattan Brass Co., New York i



(Boynton's New Gas-Tight Furnace.)

Boynton Furnace Co.,

94 BEEKMAN ST., N. Y.

Sole Owners and Manufacturers of

BOYNTON'S CELEBRATED FURNACES,

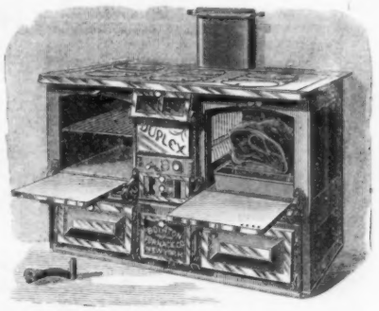
Ranges, Baltimore Heaters, etc.

With 1883-4-5 Improvements.

N. A. BOYNTON, *President.*
C. B. BOYNTON, *Sec. & Treas.*
} Inventors of all "Boynton" Furnaces, which have been on the market for over 33 years.

40 Years in this line of Business.

Over 50,000 "Boynton" Furnaces now in use.



(Boynton's Duplex Roasting and Broiling Range.)

NASHUA LOCK CO.,

NASHUA, N. H.

MANUFACTURERS OF

Builders' Hardware,

FINE CASTINGS

— IN —

Bronze, Brass, & Iron.

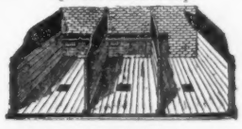
Full Line of Samples and Goods may be found at

36 Pearl St., Boston, and 148 Lake St., Chicago, Ill.

THE LARGEST MANUFACTURERS IN THE UNITED STATES — OF —

STABLE FITTINGS.

[Established 1843.]



HAY RACKS, MANGERS, ETC., ETC.

☞ Send for Prices and Catalogues.

SAMUEL S. BENT & SON,

111 Chambers St., New York.

Frank O. Worthley's Broad-Gauge Iron Stalls,

Improved Mangers, Gutters, Screens, Clock Feeders, Stable Trimmings and Novelties are the result of ten years' experience and the making of the best fittings. 53 Elm St., Boston. Illustrated Catalogue free.

Classified Advertisements (Continued).

Brick (Ornamental).
Anderson Pressed Brick Co., Chicago.....xviii
A. T. Chur, New York.....xviii
Excelsior Brick and Stone Co., Phila.....xviii
Hydraulic Press Brick Co., St. Louis.....xviii
Peerless Brick Co., Philadelphia.....xviii
Waldo Bros., Boston.....xviii
Carpets. W. & J. Sloane, New York.....i
Cement.
James Brand, New York.....xviii
Bastjer & Meyerstein, New York.....xviii
Brooks, Shoobridge & Co., New York.....xviii
Howard Fleming, New York.....x
Johnson & Wilson, New York.....xx
Marcial & Co., New York.....iv
Sinclair & Babson, New York, N. Y.....xviii
Standard Cement Co., Hartford, Conn.....xviii
Chair-Seating.
A. H. Andrews & Co., New York and Phila..ix
Harwood Chair Seat Co., Boston.....ix
Clocks for Public Buildings.
Seth Thomas Clock Co., Thomaston, Conn..iv
Conductors (Water).
Austin, Obdyke & Co., Philadelphia.....ii
Boston Spiral Tube Works, Boston.....ii
Bolderiess Standing-Seam Conductor Co., Allegheny, Pa.....ii
Conservatories.
Arthur E. Rendle, New York.....i
Contracting.
Flynt Building & Construction Co., Palmer, Mass.....i
Coppersmiths and Metal-Workers.
G. L. Swett & Co., Boston.....iv
Cornices (Galvanized-Iron).
Meeker & Bro., St. Louis, Mo.....xv
Creosote Stains.
S. Cabot, Jr., Boston.....vi
Decorative Leather.
C. R. Yandell & Co., New York.....i
Decorators.
Cox Sons, Buckley & Co., New York.....ii
L. Haberstroh & Son, Boston.....iii
Donald McDonald, Boston.....ii
W. J. McPherson, Boston.....iii
Frank Hill Smith, Boston.....ii
William Wright, New York.....ii
Electrical-Work.
Detroit Electrical Works, Detroit, Mich.....ix
Elevators, etc.
E. Brewer, Boston.....v
Crane, New York & Chicago.....i
L. S. Graves & Son, Rochester, N. Y.....i
H. B. Martin, Chicago.....v
Moore & Wyman, Boston.....i
Morse, Williams & Co., Philadelphia.....iv
Otis Brothers & Co., New York.....i
Stokes & Parrish, Philadelphia.....i
M. B. Swezey, Chicago, Ill.....v
Whittier Machine Co., Boston.....i
Z. Wile, Boston.....v
Engines (Caloric Pumping).
Delamater Iron Works, New York.....x
Engines (Gas).
Schleicher, Schumm & Co., Philadelphia.....ix
Fire-proof Building.
Fire-Proof Building Co., New York.....xix
Frank Lyons, Jr., New York.....xix
Henry Maurer, New York.....xix
Ottawa Tile Co., Chicago.....xix
Raritan Hollow and Porous Brick Co.....xix
John J. Schillenger, New York.....xix
Wight Fire-Proofing Co., New York.....xix
Floors (Inlaid).
Wm. Hannam & Co., New York.....xx
National Wood Mf'g. Co., New York.....xx
W. E. Wheeler, Toledo, O.....iv
Fret-Work.
C. S. Ransom & Co., Cleveland, O.....ix
Friction-Clutch.
A. & F. Brown, New York.....v
Furniture.
Keeler & Co., Boston.....x
Gas-Fixtures.
Archer & Pancoast M'f'g Co., New York.....x
Howland & Churchill, Boston.....ix
Mitchell, Vance & Co., New York.....i
Gas-Machines.
Denny Bros. & Co., New York.....ix
Pa. Globe Gas-Light Co., Phila.....ix
Pittsburgh Supply Co., Pittsburgh, Pa.....ix
Tirrill Gas-Machine Co., New York.....ix
Gas-Stoves.
Goodwin Gas-Stove Co., Phila.....vi
Gas-Piping.
J. F. Dalton, Boston.....
Glass Roofing.
Arthur E. Rendle, New York.....i
Glass (Stained and Ornamental).
James Baker & Son, New York.....ii
Wm. Coulter & Son, Cincinnati.....iv
Decorative Glass M'f'g Co., Chicago, Ill.....ii
George Drake, Cleveland, O.....ii
Otto F. Falck & Co., New York.....ii
Friedericihs & Staffin, Detroit, Mich.....ii
Alfred Godwin & Co., Philadelphia.....ii
R. S. Groves & Steil, Philadelphia.....ii
H. Edgar Hartwell, New York.....iii
John Matthews, New York.....iv
McCully & Miles, Chicago.....ii
W. J. McPherson, Boston.....ii
Donald MacDonald, Boston.....iii
Redding, Baird & Co., Boston.....ii
Samuel West, Boston.....ii
Granite.
Central Granite Works, Hallowell, Me...xviii
Grates, etc.
J. S. Conover & Co., New York.....xx
Henry Dibblee, Chicago.....iii
Thos. Dixon & Sons, Phila.....vii
Kurtz Grate Works, Cincinnati, O.....iv
W. H. Harrison & Bro., Philadelphia.....viii
W. Jackson & Son, New York.....vii
Edwin A. Jackson & Bro., New York.....x
Wm. H. Jackson, New York.....xx
Gutter. D. Newton, Newport, R. I.....iv
Hardware.
Burditt & Williams, Boston.....iv
Nashua Lock Co., Nashua, N. H.....xiii
Yale & Towne Co.....xx
Heating-Apparatus (Steam).
Bartlett, Hayward & Co., Baltimore.....i
B. C. Bibb & Son, Baltimore, Md.....vii
Boynton Furnace Co., New York.....xiii
J. Reynolds & Son, Phila.....vi
Heating-Apparatus (Steam).
Bates & Johnson, New York.....viii
John Davis & Co., Chicago, Ill.....vii
"Florida" Boiler Works, Geneva, N. Y.....viii
Gorton Boiler M'f'g Co., New York.....vi
A. A. Griffing Iron Co., Jersey City.....x
N. Y. Central Iron Works, Geneva, N. Y.....vii
Newell Universal Mill Co., New York.....vii
New York Steam Co., New York.....viii
H. B. Smith Co., New York.....viii
St. Louis Heating and Ventilating Co., St. Louis, Mo.....viii
Wilson Boiler Co., Westfield, N. Y.....vi
James P. Wood & Co., Philadelphia.....i
Heliotype Process.
Heliotype Printing Company, Boston.....iii
Hinges. M. W. Robinson, New York.....xvi
Hinges (Spring).
Van Wagoner & Williams Co., New York.....xx
Horse-Stalls.
Frank O. Worthley, Boston.....xiii
Insurance.
American Fire Ins. Co.....iv
Continental Insurance Co., New York.....xx
Insurance Co. of North America, Phila.....x
Iron-Work (Architectural).
Bartlett, Hayward & Co., Baltimore.....i
Boston Bridge Works.....iv
J. E. Bolles & Co., Detroit, Mich.....xx
Carnegie Bros. & Co., Pittsburgh, Pa.....xv
Cheney & Hewlett, New York.....xv
Composite Iron Works, New York.....xi
E. C. Cooper & Co., Philadelphia.....xv
M. Clements, Cincinnati, O.....iv
Cooper, Hewitt & Co., New York.....xx
Samuel J. Creswell, Philadelphia.....xv
J. B. & J. M. Cornell, New York.....xii
J. G. & T. Dimond, New York.....xv
C. F. Hollingshead, Camden, N. J.....xvi
Iron-Work (Architectural) (*continued*).
Manly & Cooper M'f'g Co., Phila.....xv
McHose & Lyon, Dayton, O.....xv
Mesker & Bro., St. Louis, Mo.....xvi
A. Northrop & Co., Pittsburgh, Pa.....xv
Passaic Rolling Mill Co., Paterson, N. J.....xv
Pennsylvania Construction Co, Pittsburgh, Pa.....xvi
Phœnix Iron Co., Philadelphia.....xv
Poulson & Eger, New York.....xv
Union Foundry and Pullman Car Wheel Works, Chicago, Ill.....xv
Kilns. W. D. Thompson, New York.....ii
Machinery.
Goodell & Waters, Philadelphia.....xvi
Machinery (Laundry).
Troy Laundry Machinery Co., Troy.....v
Mantels.
Joseph S. Miller & Bro., Philadelphia.....vii
The Butler Co., Chicago, Ill.....ix
Mantels (Slate).
Fischer-Leaf Co., Louisville, Ky.....vii
Marble Mosaics.
J. Pasquali & C. Aeschlimann, New York...iii
Marble-Workers.
A. L. Fauchere & Co., New York.....ii
Robert C. Fisher, New York.....i
Metal-Work (Art).
Joseph Neumann, Philadelphia.....xvi
Metal-Workers.
J. & R. Lamb, New York.....ii
Mineral Wool.
U. S. Mineral Wool Co., New York.....iv
Mortar Colors.
American Soapstone Finish Co., Nashua, N. H.....iv
Samuel H. French & Co., Philadelphia.....iv
Mortar Black.
Henry D. Dupee, Boston.....xviii
Paint.
Liquid Glass Paint Co., Hartford, Conn.....iii
Photographs.
Soule Photograph Co., Boston.....iii
J. W. Taylor, Chicago, Ill.....i
Pipe-Covering.
The Chalmers-Spence Co., New York.....vii
Pumps (Steam).
H. R. Worthington, New York and Boston..v
Reflectors.
I. P. Frink, New York.....ix
Registers.
Tuttle & Bailey Man'f'g Co., New York and Boston.....vi
Rolling-Shutter.
J. G. Wilson, New York.....x
Roofing Materials.
Cincinnati Corrugating Co., Cincinnati, O..xv
W. Ehret Roofing Co., Philadelphia, Pa.....x
Eureka Slate Co., Poultney, Vt.....xiv
N. & G. Taylor Co., Phila.....xiv
N. E. Felt Roofing Co., Boston.....xiv
Roofers.
John Farquhar's Sons.....x
Knisely & Miller, Chicago, Ill.....xiii
Sanitary Supplies.
Myers Sanitary Depot, New York.....xx
Wm. Powell, Cincinnati.....xvii
Sanitas Manufacturing Co., Boston.....xvii
Joseph Zane & Co., Boston, Mass.....xvi
Sash-Chains.
Smith & Egge M'f'g Co., Bridgeport, Conn...xx
Sash-Cord.
J. P. Tolman & Co., Boston.....x
Sash-Locks.
Chandler & Farquhar, Boston.....xvi
Scenery (Theatrical).
Lafayette W. Seavey, New York.....xx
Schools (Architectural).
Columbia College, New York.....vi
Cornell University, Ithaca, N. Y.....vi
Harvard University, Cambridge, Mass.....vi
Institute of Technology, Boston.....vi
Screens.
American Screen Co., Brookline, Mass.....ix
Sewer-Gas Trap.
H. P. Bower & Co., Cleveland.....xvii
Shingle Stains.
S. Cabot, Jr., Boston.....v
Shutters.
Clark, Bunnett & Co., New York.....xx
Skylights, etc.
Bickelnhoupt Bros., New York.....viii
G. Hayes, New York.....viii
Arthur E. Rendle, New York.....i
John Seton, Brooklyn.....viii
C. L. Swett & Co., Boston.....iv
E. Van Noorden, Boston.....viii
Slate.
American Bangor Slate Co., Bangor, Pa.....xiv
Bangor Union Slate Co., Bangor, Pa.....xiv
East Bangor Consolidated Slate Co., East Bangor, Pa.....xiv
T. F. & J. A. Hayden, St. Louis, Mo.....xiv
Story & Wilbur, Boston.....xiv
Monson Slate Agency, Lowell, Mass.....xiv
Sliding-Door Rail.
Geo. F. Taylor, New York.....xvi
Snow-Guards.
M. Halliday, New York.....xiv
Soapstone Finish.
American Soapstone Finish Co., Nashua, N. H.....xiv
Stable Fittings.
Samuel S. Bent & Son, New York.....xiii
Statuary (Bronze).
National Fine Art Foundry, New York.....xv
Stone (Building).
Hallowell Granite Co., Bedford, Ind.....xviii
M. H. St. John, New York.....xviii
Malone & Co., Cleveland, O.....xviii
Ohio Building Stone Co., Cleveland.....i
G. P. Sherwood, New York.....xviii
Terre Haute Stone Works Co., Terre Haute, Ind.....xviii
Thomlinson & Reed, Chicago.....xviii
Street-Lighting.
Globe Gas-Light Co., Boston.....ix
Terra-Cotta.
Baltimore Terra-Cotta Co., Baltimore, Md..xix
Jas. H. Beggs & Co., Wilmington, Del.....xix
Boston Terra-Cotta Co.....xix
A. Hall Terra-Cotta Co., Perth Amboy.....xix
Northwestern Terra-Cotta Wks., Chicago...xix
H. A. Lewis, Boston.....xix
Peerless Terra-Cotta Co.....xix
Tiles.
American Encaustic Tiling Co., New York...i
T. Aspinwall & Son, New York.....i
Alfred Boote, New York.....ii
J. K. Brigham, New York.....iii
John Chadwick, New York.....xi
Henry Dibblee, Chicago.....iii
International Tile Co., New York.....iii
J. G. & J. F. Low, Chelsea, Mass.....iii
Miller & Coates, New York.....i
O. D. Person, New York.....xix
Sharpless & Watts, Philadelphia.....ii
U. S. Encaustic Tile Co., Indianapolis.....i
Vanes.
T. W. Jones, New York.....v
Valves and Packing.
Jenkins Brothers, New York.....x
Peet Valve Co., Boston.....vii
Vault Lights.
Dauchy & Co., Chicago.....xi
Ventilation.
Globe Ventilator Co., Troy, N. Y.....viii
E. Van Noorden & Co., Boston, Mass.....viii
Wall Paper.
C. H. George, New York.....iii
Water-Closets.
E. Aspinall, New York.....xvii
Henry Huber & Co., New York.....xvii
Haines, Jones & Cadbury, Phila., Pa.....xvii
Thomas Maddock & Sons, New York.....xvii
Water-proofing.
Brick & Stone Waterpr'f'g Co., New York.....i
Window-Blind Worker.
A. H. Dodd, Hudson, N. Y.....iii
Window-Blinds.
Morstatt & Klatzl, New York.....v
Wire Lathing, etc.
Clinton Wire Cloth Co., Clinton, Mass.....v
Corrugated Wire Lathing Co., New York.xviii
Wire and Iron Work.
National Wire & Iron Co., Detroit, Mich.....iii

SOAPSTONE FINISH.

Superior to Plaster or Sand Finish, for Walls and Ceilings. Send for Circular.

AMERICAN SOAPSTONE FINISH COMPANY,

NASHUA, N. H.

EUREKA SLATE CO.,

Quarriers and Dealers in

THE ONLY PURE UNFADING GREEN ROOFING SLATE.

PURPLE, SEA GREEN, RED, and BLACK SLATES.
Also Billiards, Paving Slabs, Mantels, Urinals and all Kinds of Slate Works.
Eureka Slate Quarries, Poultney, Vt.
Outer Temple Building,
Strand, London, England.
Send for Price List.

STORY & WILBUR,

formerly A. Wilbur & Co. (Established 1821.

EMPORIUM FOR

ROOFING SLATES

We have the entire production of
MERRILL'S
BROWNVILLE (MAINE) SLATE
ALSO THE
MONSON (MAINE) SLATE,

Both of which are Black and Unfading and the standard Slate of the market. Used by all Boston architects for first-class buildings, and the cheapest slate in the market for the quality. Also,

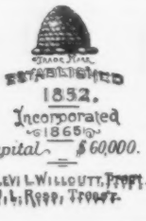
WELSH, BANGOR PENNSYLVANIA, STAR PENNSYLVANIA, BLACK DIAMOND PURPLE and GREEN SLATES

Roofing-Tin, Zinc, Solder, Nails, Elastic Cement, Rozin-Sized, Tarred and Dry Felts.

RED SLATES.

Our stock of Slates embraces over 20,000 squares, of all grades and prices. Particular attention to shipments by vessel or rail, for export or home trade.
Special rates by car-loads from quarries.
Inquiries promptly answered.

Slate Wharves, 529 Commercial St.,
Joseph Story. BOSTON. S. A. Wilbur.



NEW ENGLAND
Felt Roofing Co.
22 Milk St., Boston.
Originators of Felt Roofing in New England.
Inventors and only Manufacturers of the Celebrated
"BEEHIVE BRAND."

T. F. & J. A. HAYDEN,

WHOLESALE DEALERS IN

ROOFING SLATE

Cor. Twelfth and Locust Sts. St. Louis Mo.

Unfading Black Roofing-Slates.

From the Monson (Maine) Slate Quarries.

These Slates are uniform in thickness, very strong, smooth surfaces and unfading in color.

For sale by

MONSON SLATE AGENCY.

P. O. BOX 337, LOWELL, MASS.

MONOGRAPH of AMERICAN ARCHITECTURE.—I.

HARVARD LAW-SCHOOL. H. H. Richardson, Architect.

18 Plates (Gelatine, from Nature), 13 x 16, in Portfolio. PRICE, $5.00.

Published By

Ticknor & Co., 211 Tremont St., Boston.

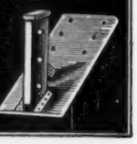
DUGAN'S PATENT

SNOW GUARDS FOR SLATE AND OTHER SLANTING ROOFS.

Send for Illustrated Circular and Price List.

M. HALLIDAY,

Sole Proprietor and Manufacturer,
218 East Ninth Street, New York.



THE AMERICAN BANGOR SLATE CO.

Miners and Manufacturers of PENNSYLVANIA

BLACK ROOFING SLATE,

FLACCING and other products from the famous Bangor Slate beds. The products of these beds are of uniform color, and are equal in strength and quality to any produced in Pennsylvania. ☞ It will pay builders and contractors to address THE AMERICAN BANGOR SLATE CO. BANGOR, PA.

ARCHITECTS.

As the genuine "*Old Style*," double coated, and the "*Westminster*," re-dipped, brands of Roofing-Tin are now being specified by architects, particularly where first-class work is required, the following testimonial, just received, may prove of interest and value to those requiring a *first-class* guaranteed Tin Roof.

N. & G. TAYLOR CO.,
(Established 1810.)
Philadelphia, Pa.

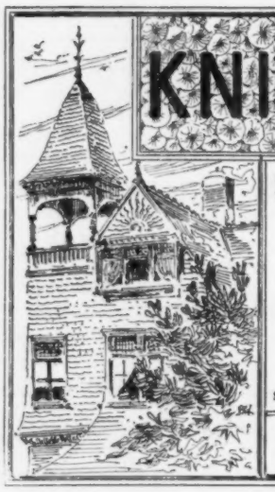
New York, N. Y., June 1, 1885.

Messrs. N. & G. Taylor Co., Philadelphia.

Gentlemen:—We desire to express to you our high regard for the excellent satisfaction obtained from the use of your roofing tin as furnished on the many jobs that have come under our planning and inspection, and we must candidly say that in every case where your "**Old Style**" brand, double coated, and the "**Westminster**" re-dipped tin has been used on our work it has *in every instance turned out fully satisfactory and in every way desirable for the best interests of our clients and their work.* We have tested the tin in various ways and have compared it with other high grades of tin on the market and have always found it good and up to every thing claimed for it. We believe it to be as good tin as the market affords, and to be such that it will suit the most exacting, as to quality and durability.

We have often heard the mechanics, who were working it, sing its praises and extol it as to its working qualifications.

Very truly yours,
(Signed) PALLISER, PALLISER & CO.,
Architects.



KNISELY & MILLER

SLATE, TIN, and IRON ROOFERS.

Manufacturers of
Galvanized Iron and Copper Work,
THE HAYES PATENT SKYLIGHTS,
Corrugated Iron, Etc.
Special attention to first-class work thoroughly guaranteed.

129 & 131 S. CLINTON St CHICAGO.

East Bangor Consolidated Slate Co.,

EAST BANGOR, PA.,
Manufacturers of
Best Bangor Roofing Slate.
Sawed and Planed Slabs, Hearths, Coping, Sills, Lintels, Platforms, Steps, and Risers.
Slate Mantles as low as $6.00.

G. W. Mackey, Pres. J. E. Long, V. Pres. A. M. Paff, Sec. & Treas.

BANGOR UNION SLATE CO.,
Manufacturers and Shippers of
Best Bangor Roofing and
SCHOOL SLATES,
BANGOR, PENN'A.

Iron-Work.

UNION FOUNDRY

—AND—

Pullman Car-Wheel Works.

Architectural Iron-Work

A SPECIALTY.

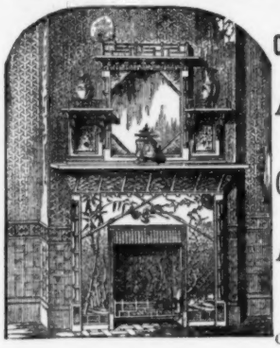
Dealers in Beams, Channels, Angles, and Shapes, both Iron and Steel.

Correspondence solicited and prices given on all classes of Iron-Work.

ESTABLISHED 1852.
N. S. BOUTON, Pres't.

OFFICE, 164 DEARBORN ST.,
CHICAGO.

THE HECLA ARCHITECTURAL BRONZE & IRON WORKS.



POULSON & ECER,
Office and Ware-rooms, 216 and 218 W. 23d St., New York.
Works, N. 11th and 3d Sts., Brooklyn, E. D., L. I.

Artistic Metal Mantels and Over-Tops, in

BRONZE, BRASS,

Oxidized-Iron, Galvano-Plastic, and Electro-Plated Iron.

Architectural and Ornamental Cast and Wrought Iron Work of every description.

Correspondence with Architects and Builders solicited. Illustrated Catalogue and Price-List on application.

McHOSE & LYON, Dayton, Ohio,

ARCHITECTURAL IRON WORKS.

IRON FRONTS FOR BUILDINGS,

Columns, Girders, Wrought-Iron Fencing, Prismatic Sidewalk-Lights, Iron Stairs. All kinds of Iron-Work used in Buildings. Grey Iron Steam-Fittings.

Designs and Estimates furnished on application.

CORRUGATED

IRON ROOFING

SIDING, CEILING.
ARCHES AND LATH.

CINCINNATI CORRUGATING CO.
CINCINNATI. O.
SEND FOR ILLUSTRATED CATALOGUE.

CRIMPED

E. C. COOPER & CO.,
(E. C. COOPER, late of Manly & Cooper.)

Ornamental Iron Works,

39th and Woodland Avenue,
PHILADELPHIA.

Railings, Fountains, Stairs, Doors, Stable-Fittings, Crestings, Shutters, Tree-Guards, Settees, etc.
Builders' Artistic Iron-Work a Specialty.

NORTHROP'S
PATENT PANELED IRON CEILING.

DURABLE, HANDSOME AND FIRE-PROOF.
Will not stain or crack off as plaster, or warp and burn as wood.
NORTHROP'S PAT. CAP-SEAM IRON ROOFING.
Over 3,500,000 square feet used in the past ten years. Suitable for all classes of buildings.
s never out of repair. Address, A. NORTHROP & Co.,
CORNER 23d and MARY STS., PITTSBURGH, PA.

PENNSVLYANIA CONSTRUCTION CO.

Architectural Iron-Work,

Steel Jails, Vault-Doors, Roofs, Riveted Girders, Stairways, Bridges, Fencing, Iron Bedsteads and Cresting.

Offices: No. 132 First Avenue,
PITTSBURGH, Penn.

Rolled and Drawn Steel Hand Rail, in 20 Feet Lengths.

Ornamental Iron Works.

MANLY & COOPER MANUF'G CO.

ELM AVENUE AND 43d STS.,
PHILADELPHIA.

BRIDGE RAILINGS
JAIL AND BANK WORK
GRILLS, ANDIRONS
SHUTTERS, DOORS, &C.

Railings, Gates, &c. for Residences and Public Institutions.

Special facilities for the manufacture of **FORGED** *and* **PLANED** *Wrought Iron Work for Interior Decorations.*

Send for Catalogue.

NATIONAL

Fine Art Foundry,

218 East 25th Street, New York.

Artists' Models cast in Standard Bronze.

Architects' Designs Executed.

Artistic and Enduring Monuments in Granite and Bronze.

No Catalogues.

MAURICE J. POWER.

J. C. & T. DIMOND,

Architectural Iron-Works.

ESTABLISHED 1853.

209 and 211 West 33d Street, New York City.

IRON

Buildings, Roofs, Fronts, Beams, Girders, Stairs, Columns, Railings, etc., etc.

Special attention given to ornamental Wrought-Iron Work.

THE

PHŒNIX IRON COMPANY,

410 Walnut St., Philadelphia, Pa.

Manufacture Rolled Beams, Channels Angles, Tee, Shape and Bar Iron of all sizes.

Roof Trusses, Girders, and Joists for fire-proof buildings framed and fitted as per plans.

PHŒNIX Wrought-Iron Columns of all sizes.

Die-forged Weldless Eyebars a specialty Designs and estimates furnished.

Boston Agents, FRED. A. HOUDLETTE & Co., 272 Franklin Street.

New York Agents, MILLIKEN & SMITH, 95 Liberty Street.

SAMUEL J. CRESWELL,

IRON WORKS,

Twenty-third and Cherry Streets,
PHILADELPHIA, PENN.

Fronts for Buildings, Columns, Girders, Wrought-Iron Beams, Sidewalk Lights, Drinking-Fountains, Garden Vases, Stairs, Crestings, Stable Fixtures, Lamp-Posts, Railings.

CHENEY & HEWLETT,

Architectural Iron Works.

Wrought and Cast Iron Work for Building Purposes.

N. CHENEY. } OFFICE: { 201 BROADWAY,
C. HEWLETT. } { New York.

Book givingst rength of wrought-iron girders, beams, and cast-iron columns mailed on application.

Passaic Rolling Mill Co.

PATERSON, N. J.

SOLID ROLLED BEAMS,

Channels, Angles, Tees and Merchant Iron.

New York Office, Room 45, Astor House.

MESKER & BRO.,

Galvanized Iron Cornices,

Window Caps and SKYLIGHTS.

Send for Catalogue.

421 to 429 South Sixth St., ST. LOUIS, MO.

CARNEGIE BROS. & Co. LIMITED.

UNION IRON MILLS.

DEPARTMENT
BRANCH OFFICE, 33rd ST.
PITTSBURGH, PA.
MANUFACTURERS OF
WROUGHT IRON BEAMS,
TEES,
CHANNELS, ANGLES,

STRUCTURAL & BRIDGE IRON.
LITHOGRAPH OF SECTIONS,
AND BOOK OF DETAILED
INFORMATION FURNISHED
ENGINEERS AND ARCHITECTS
ON APPLICATION.

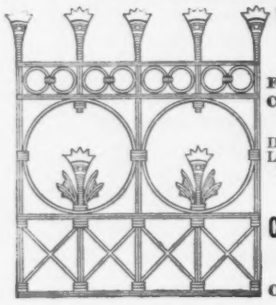
Iron Work.

JOSEPH NEUMANN,
N. W. Cor. Eleventh & Race Sts.,
PHILADELPHIA, PA.
MANUFACTURER OF
Art * Metal Work

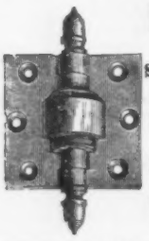
Bronze Grilles for Front Doors.
Window Railings.
Ornamental Lanterns.
Brass Railings for Banks.
Brass Lamps for Churches
Brass Work for Church Altars.
Metal Signs.

Correspondence Solicited.
Estimates Cheerfully Furnished.

C. F. HOLLINGSHEAD,



Wrought-Iron Railings,
Fences, Roof-Cresting, Finials, etc.
Doors, Shutters, Light Iron Roof-Trusses, Fire-Escapes, Etc.
Cooper's Point Iron Works,
Camden, N. J.



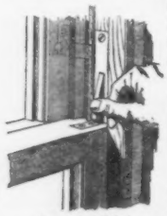
Union Spring Hinges
ARE
SIMPLE, EASILY SET,
Cannot be Put on Wrong.
They work either way, right or left. All sizes. Single or double acting.
For Wire Screens or Light Doors they have no equal.
Send for Price List.
M. W. ROBINSON, Sole Agent, 72 Chambers St., New York

Farquhar's Improved
BURGLAR PROOF
Sash Lock.

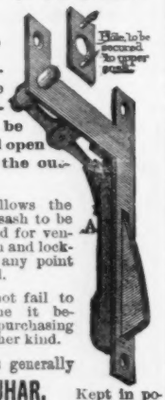
This new device is a perfectly secure lock for the window which cannot possibly be forced open from the outside.

It allows the upper sash to be dropped for ventilation and locked at any point desired.

Do not fail to examine it before purchasing any other kind.



Lock applied.



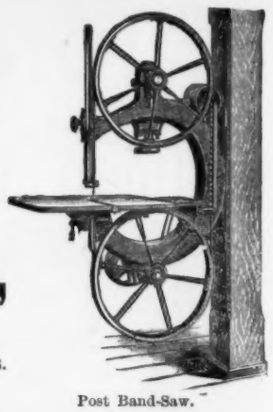
Kept in position by spring A.

For Sale by Hardware Dealers generally
CHANDLER & FARQUHAR,
Manufacturing Agents,
177 and 179 WASHINGTON ST., BOSTON.

Architects, Builders and others will confer a favor on the Publishers by mentioning "*The American Architect and Building News*" when sending for circulars or corresponding with parties advertising in these columns.

Band-Saw Filer.

Band-Saw Setter.



Post Band-Saw.

Wood-Working Machinery,
FOR PLANING-MILLS, SASH, DOOR, AND BLIND FACTORIES, CABINET AND CARRIAGE MAKERS.
Send for Catalogue.
GOODELL & WATERS,
Philadelphia, Pa.
NEW YORK WAREROOMS, 115 LIBERTY ST., NEW YORK.

The "CLIMAX" Rail for all Sliding Doors.

Fig. 1. showing the door open, with centre rail level with floor. Fig. 2. Section of sheave, showing its position on rail. Fig. 3. Showing the door closed, with sheave in position and centre rail depressed. Fig. 4. Showing the track running off in the recess.

We claim for this rail all of the following advantages:

It is level with the floor, offering no obstruction in walking, dancing, moving of furniture, etc.

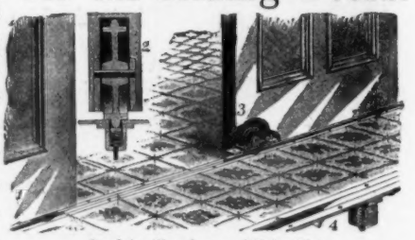
The door cannot get off the track, and runs lightly, smoothly, and noiselessly.

The house does not have to be built for the track, it can be laid in old houses as well as in new.

Full directions for laying them sent with each Track.

Models sent on application.

Manufactured only by the "CLIMAX" Rail Co.



Send for Circulars and Price Lists.

Address all Communications to GEO. F. TAYLOR, Business Manager, 134 Water St., New York.

Monographs of American Architecture,
Monograph I.—Austin Hall,
CAMBRIDGE, MASS.
H. H. RICHARDSON, ARCHITECT.
Price, $5.00.
TICKNOR & CO. 211 Tremont Street, Boston, Mass.

Sanitary Supplies.

The Zane Patent Sanitary Water-Closet.

Self-closing and compression Safety Basin-Cocks, for hot and cold water.

The attention of the public is called to our new water-closet, which is the most perfectly constructed, SIMPLEST and BEST ever made. The combination of the FLUSH-TANK and BASIN in one apparatus, ensures a large supply of water to thoroughly flush the soil-pipe and drain every time the closet is used. One of the reliable SELF-CLOSING BALL-COCKS regulates the supply of water. It is partly self-ventilating, but can be connected with a hot flue so as to make the ventilation of the closet perfect. The closet is constructed in such a manner that it can be used either with or without a trap, and can be used in place of old-style closets without altering the pipes or seat. The closet will work equally as well with either street or tank pressure, and no matter how light the pressure is the valve does not close until the bowl is filled with water.

All goods of our manufacture are stamped with our name, and are **Warranted** in every respect.

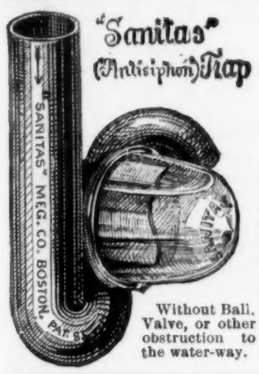
Self-closing and Compression Safety-Bibbs for hot and cold water.

Self-closing and adjustable Ball Cock. Sure Pop.

Can be seen in operation at our Store, and also at Messrs. FRED. ADEE & CO.'S, our Agents, 52 Cliff St., New York.

JOSEPH ZANE & CO.,
81 Sudbury St., Boston, Mass.

Sanitary Appliances.



Without Ball Valve, or other obstruction to the water-way.

THE "SANITAS" PATENT

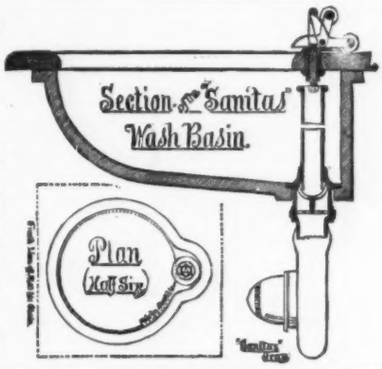
TRAP. WASH-BASIN. BATH-TUB. SINK. SOIL-PIPE. Etc.

These are the appliances described in the "*American Architect*," for 1883, 1884, and 1885, in the articles on "*Sanitary Plumbing*," and denominated "Anti-Siphon Trap," "Stand-pipe Basin," etc.

Col. Waring, writing of the trap ("Putnam's Trap"), in the *Century* Magazine, for Dec., 1884, says he finds it "effective in withstanding siphonage and substantially self-cleansing," and adds,

"IT SEEMS TO ME THE BEST TRAP I HAVE SEEN."

The Sanitas Wash-Basin, Bath-Tub, and Pantry-Sink, are quick emptying, without concealed passages. The Soil-pipe is cast of even thickness throughout, and jointed with steam and gas-tight joints. The "Sanitas" appliances are acknowledged by experts to be by far the best in the market.

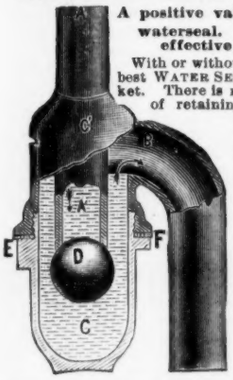


For Sale by all Dealers in Plumbers' Supplies, or by the

SANITAS MANUF'G CO., 4 Pemberton Sq., Boston.

AGENTS WANTED.

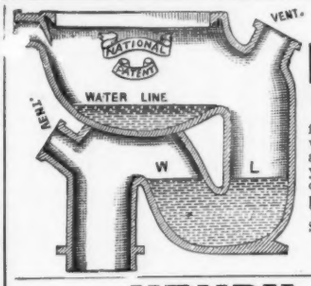
THE BOWER SEWER-GAS TRAP.



A positive valve Seal; a sound waterseal. Simple, cheap, effective and durable.

With or without the Valve, it is the best WATER SEAL TRAP in the market. There is no other Trap so sure of retaining its WATER SEAL. None that approximates it in the surety of the VALVE SEAL. The Valve keeps its seat by flotation, and as compared with other Valves in Traps, is little or no resistance to the outflow of water or waste. *Illustrative and descriptive 48-page pamphlet sent free on application.*

B. P. BOWER & CO.
Manufacturers,
CLEVELAND, O.



The "NATIONAL"

IMPROVED FLUSH, SIDE-OUTLET CLOSET.

ADVANTAGES: Simplicity, Cleanliness, Efficiency, Cheapness.

Being **all earthernware**, and requiring no metal fittings, which foul and get out of order, there are **no parts** in Basin and Trap where **filth can accumulate**; the Basin and Trap being left clean at each flush. **25,000** have been sold since its introduction four years ago. **Prices are lower** than those of any other first-class closet claiming the same advantages. Made either complete in one piece, of earthernware or in two pieces with Basin and Trap separate. With or without seat-ventilator. Manufacturer: Thos. Twyford, Staffordshire, England. **Sole agent for the United States,**

E. ASPINALL, 206 Pearl St., New York.
Agent for Canada, THOS. JORDAN, Montreal.

POWELL'S PATENT "STAR" Bath, Basin, Sink & Tray Plugs With Rubber Stoppers.

Manuf'd by WM. POWELL & CO. 82 and 84 PLUM STREET, CINCINNATI, OHIO.

No more denting of Copper Bath Tubs, no cracking or breaking of earthenware Basins, with the use of these Rubber Plugs. Plumbers all prefer them; architects specify them generally. Sold by plumbers everywhere.

HENRY HUBER & CO.,

Sole Manufacturers of

Boyle's Patent Siphon Closets.

See Monthly American Architect for Cuts and Explanation.

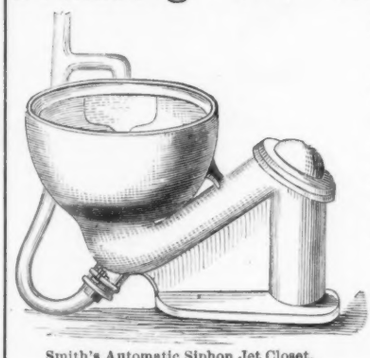
MAIN OFFICE:	BRANCH OFFICE:
85 Beekman Street, New York.	**235 Washington Street, Boston.**

THOMAS MADDOCK & SONS,

MANUFACTURERS OF

Plumbing and Sanitary Earthenware,

Including all Specialties pertaining to the Plumbing Business.



Smith's Automatic Siphon Jet Closet.

Smith Automatic Siphon Jet Closet,

We have lately adopted a New Flushing Cistern, which being much more simple in construction than the old method, an immediate flush is secured on the pulling of the handle, and we have been enabled to reduce the list price of the complete article *more than twenty per cent*, thus putting it within the reach of all, and obviating the only objection that has ever been raised.

Can be seen in operation at our Office and Warerooms.

Further particulars furnished on application.

273 Pearl Street, New York,

W. W. PERRINE, Manager.

Illustrated Catalogue of our manufactures will be packed, if desired, with first order.

Modern Perspective.

A TREATISE UPON THE PRINCIPLES AND PRACTICE OF PLANE AND CYLINDRICAL PERSPECTIVE

By WILLIAM R. WARE, Professor of Architecture in the School of Mines, Columbia College. 1 volume, 12mo, 321 pages, with 27 Plates in a Portfolio, $5.00.

This is by far the most exhaustive of modern works on the subjects relating to perspective, plain and panoramic, and will be of great value to all architects and artists, and others interested in the problems of art. The scientific and pictorial aspects of these investigations are carefully and thoroughly considered, both independently and in their connection with drawing; and the propositions of the author are illustrated by plates of architectural objects and perspective plans.

An Invaluable Book for Artists, Architects, Draughtsmen and Civil Engineers.

"This work is clear in expression, subdivides the matter under appropriate heads, and embodies the latest practice, together with the accepted principles."—*Engineering News.*

"Clear, concise and full. . . . Among the contributions to educational literature for which those who are interested in the subject cannot be too thankful. . . . The plates that accompany the book are models of cleverness and elegance."—*The Builder.*

"A valuable contribution to an old and important question. There is much in it that will interest the painter—whether landscape, figure or historical—and no artist, draughtsman, architect, or true mechanic, especially if young and ambitious, should be without this book."—*The Record and Guide.*

"The book is written in clear English, free from unnecessary technicalities, and in a much more felicious style than such text-books usually are. The plates require a prodigious quantity of careful work, and are correspondingly valuable."—*New York World.*

For sale by Booksellers; sent, postpaid, on receipt of price, by the Publishers,

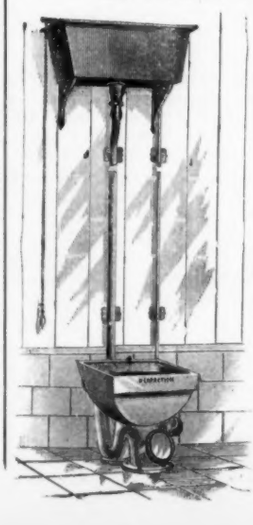
TICKNOR & CO., 211 Tremont St., Boston.

"PERFECTION"

ALL PORCELAIN

Square Top, Wash-out Cistern Closet.

INTRODUCED IN 1884.



FOR perfect cleanliness, combined with simplicity of construction, we invite comparison with any water-closet wherever or whenever made. For the past nine months we have had orders for as many as we could manufacture, with all our conveniences, and they have never failed to give entire satisfaction. The square top avoids the necessity for a drip-tray and has no under side, as the drip-tray, to get foul. The wash at all times thoroughly scours all parts of the closet and is sufficient to entirely cleanse the trap, access to the inside of trap and soil-pipe is furnished by a large hand-hole in front. The Closet and Trap are made in one solid piece of porcelain, and provided with thorough ventilation, ensuring an absolute seal and protection against sewer-gas.

Illustrated Circulars will be sent on application.

Manufactured only by

HAINES, JONES & CADBURY, 1136 Ridge Avenue,
PHILADELPHIA.

Building Stones.

THOMLINSON & REED,
Quarrymen, and Dealers in
OOLITIC LIMESTONE
Quarries at Avoca, near Bedford, Ind.,
Branch Office:
Cor. Polk and Ellsworth Sts., Chicago.

Dorchester, (New Brunswick.) Yellow.
FREESTONE.
Corsehill, (Scotch.) Red.
FREESTONE.
G. P. SHERWOOD, 24 Pine St., New York.

MALONE & CO.,
Proprietors of the
Malone Blue-Stone Quarries,
Miners and Manufacturers of
SAWED AND BLOCK STONE.
Platforms up to thirty feet in length, for sidewalks, a specialty. CLEVELAND, OHIO.

BEDFORD OOLITIC LIMESTONE,
Buff and Blue.
HALLOWELL CRANITE CO.,
Quarrymen and Dealers in
Building, Sawed, and Rough
DIMENSION STONE.
P. O. Address - - - Bedford, Ind.

Clark's Island Granite Quarries
OF ROCKLAND, ME.
Estimates given for **Building Dimensions** and **Monumental Work** in Granite, with extra facilities for dispatch and beauty of finish.
M. H. St. JOHN,
Owner and Proprietor.
Office: 83 and 84 Astor House, New York.

Stinesville Oolitic Limestone,
The finest Building-stone in Indiana.
Columns, Lintels, Sills, etc.
Terre Haute Stone Works Co.,
Quarries and Mills on Louisville & Chicago R. R.
At Stinesville, Monroe Co.
JAMES B LYNE, President.
Office of Company, - Terre Haute, Indiana.

Cranite Monuments
With or without Statues.
Building-Work in all of its Branches.
Granite in the rough, and models in Plaster-paris of any description will be furnished to architects and builders at very moderate prices. Our granite is white, free from iron or blemish. We have cut statues for almost every state in the Union, some of them the largest and the most valuable in the country, will refer to them if requested. Apply to,
CENTRAL GRANITE WORKS, Hallowell, Me.

Picturesque Sketches.

Comprising statues, fountains, cathedrals, tombs, iron-work, fireplaces, towers, etc. In handsome wr apper. $1.50.

"An architectural miscellany which many designers will be glad to have."—*American Architect.*

"Sketches exceptionally fine. . . . A source of constant suggestion and inspiration."—*Boston Transcript.*

"This interesting and instructive portfolio."—*Providence Journal.*

Old Masters

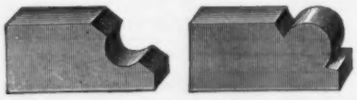
OF BELGIUM AND HOLLAND. Translated by Mrs. Mary E. Robbins, from the French of Eugene Fromentin. 1 vol. 8vo. With 12 full-page Heliotypes. $3.

The Boston *Courier* says; "It is difficult adequately to convey a sense of the charm of this book."

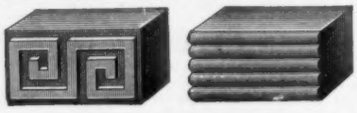
The N. Y. *Star* says that "it lets the reader into the real life of the artists, into their surroundings, and even into their feelings."

Published by
TICKNOR & COMPANY,
211 Tremont Street, Boston, Mass.

CHICAGO ANDERSON PRESSED BRICK CO.
157 Lasalle Street,
CHICAGO, ILL.
FRONT & ORNAMENTAL
Pressed Brick.



BRICKS!
THE HYDRAULIC
PRESS BRICK CO.
ST LOUIS, MO.
Make a Specialty of Ornamental & Plain
Red Front Pressed Brick,
Manufacturing Annually over
TEN MILLIONS.
They guarantee that the quality, finish and Color, are unsurpassed, if not unequalled by any other bricks made in the United States.



TERRA-COTTA
CHIMNEY TOPS,
PHILADELPHIA AND PEERLESS (MOULDED) BRICK,
Akron Drain-Pipe. Portland, Roman, and Rosendale Cements. Hearth Tiles & Chimney Flue Lining.
WALDO BROS.,
88 Water Street, BOSTON.

AUGT. T. CHUR,
Room 14, 5th story, Mills Building, N. York
Importer of
"WILCOCK'S" Enamelled Bricks,
Impervious to any atmospheric effect, and may be used with perfect safety in the face of moisture and frost.

BROOKS, SHOOBRIDGE & CO.,
BEST ENGLISH PORTLAND CEMENT.
Works: Grays, Essex, England.
New York Office: 7 Bowling Green.

SINCLAIR & BABSON,
IMPORTERS OF
PORTLAND CEMENT,
105 John St., New York.
Brands, O. F. ALSEN & SONS, and K. B. & S.
Remit 15 cts. for Practical Treatise on Cement.

PEERLESS BRICKS.
THE PEERLESS BRICK COMPANY
OF PHILADELPHIA,
MANUFACTURES AND KEEPS IN STOCK
ARCHITECTURAL SHAPES, 300 KINDS.
ALSO
RED Pressed Fronts.
Extra fine in color and quality.
BUFF, Solid rich color,— beautiful.
One of the finest bricks made.
DRAB, Handsomer and more durable than stone.
BROWN, Very strong and superior to brown stone.
GRAY, A very desirable shade.
BLACK, Velvety jet face.
The only black brick fit for a fine building, producing a beautiful effect, and free from the glossy and greasy look of other black or dipped bricks.
DIAPERING and ORNAMENTAL
Bricks made in the above colors.
ARCHES OF ALL KINDS.
1003 WALNUT STREET, Philadelphia.
SAMUEL HART, PRESIDENT. JOSEPH WOOD, JR., TREASURER.
THE PEERLESS BRICK COMPANY
Wish to inform Architects and Dealers that no one is authorized to act as Agent for the sale of our manufactures.
Illustrated Catalogue and Price-List sent free on application.

ENAMELLED BRICKS,
Manufactured by the
Excelsior Brick and Stone Co.,
Of Philadelphia.
Buff, Brown, Black, White,
And Light-Blue Bricks
Always in Stock.
Hand-made Red Front Pressed Bricks,
Carrying One Million in Stock.
Samples on application to the office,
140 54th St., Philadelphia.

Cements.

STANDARD CEMENT CO.,
Manufacturers of
Hydraulic Cement And Hydraulic Lime.
E. G. WESTCOTT, Gen. Eastern Agt., Hartford, Ct.
Works at
Akron, N. Y. St. Louis, Mo. Mankato, Minn.

HANOVER PORTLAND CEMENT
And the
Genuine Limmer Asphalt Mastic.
BAETJER & MEYERSTEIN,
5 Dey St., New York.

Best Brands of English and Continental
Portland Cements.
K. B. & S. English, Lafarge French,
Burham English, Lime of Teil,
Fewer German, Keene's Fine,
Jossan Antwerp, Keene's Coarse.
IMPORTED BY
JAMES BRAND, 85 BEEKMAN ST.,
NEW YORK.

WALPOLE MORTAR BLACK.
THE ORIGINAL.
The best in use and the only one that has stood the test of time. It improves the mortar, and is cheaper and better than Lampblack. Beware of imitations and use only the "Walpole."
HENRY D. DUPEE, Proprietor,
44 to 46 Oliver Street, Boston,
PROVIDENCE, R. I. Manchester & Hudson, Agents.
NEW YORK, Candie & Smith, foot E. 26th St. Ag'ts.

The simplest and best metallic plastering surface in use. **Corrugated Wire Lathing.** An improvement on flat wire lathing.
ABSOLUTE PREVENTIVE OF CRACKED WALLS AND CEILINGS.
A combined Furring and Lathing, in flat sheets, for use on face of Beams or Studding; can be applied by any one; a perfect Fire-proofing; no combustible material; fire cannot spread.
The Stanley Corrugated Fire-Proof Lathing Co., 239 Broadway, Room 14, N. Y.

Fire-proof Building.

THE WIGHT FIRE-PROOFING COMPANY,

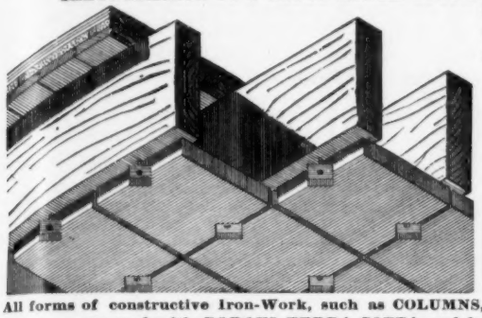
202 La Salle St., CHICAGO, 69 Washington St., NEW YORK.

CONTRACTORS FOR ALL KINDS OF FIRE-PROOF WORK IN

Porous Terra-Cotta and Hollow Fire-Clay Tiles

IN ALL PARTS OF THE UNITED STATES.

ILLUSTRATION OF POROUS TERRA-COTTA FIRE-PROOF CEILING.



500000 feet of this ceiling have been put up in Chicago, Milwaukee and Cleveland, and it is now being put in the American Bank-Note building, New York.

Patented April 16, 1878, and March 6, 1883.

Top of Ceiling Tile.

Bottom of Ceiling Tile.

All forms of constructive Iron-Work, such as COLUMNS, GIRDERS, and ROOF TRUSSES covered with POROUS TERRA-COTTA and left ready for plastering. Partitions, Furring and Roofing Furnished and Set.

FIRE-PROOF BUILDING MATERIALS.

Raritan Hollow and Porous Brick Company,

EDWARD KEASBEY, Pres't. J. C. ROSSI, Sup't. H. M. KEASBEY, Sec. and Treas.

Manufacturers of Hollow Burnt-Clay Bricks and Porous Terra-Cotta Bricks,

For Floors, Ceilings, Partitions, Furring, Roof-Lining, Column Fire-Proofing, etc.

Offices, 115 Broadway, New York, and 249 South 6th St., Philadelphia.

Agents: FISKE & COLEMAN, Boston. GARFIELD, FERTIG & CO., Allegheny, Pa.

Estimates Furnished. Builders Supplied. Send for Illustrated Catalogue.

GEO. M. MOULTON, Pres't. A. T. GRIFFIN, Vice Pres't. E. V. JOHNSON, Sec'y., Treas. and Gen'l. Man'g'r.

FIRE-PROOF HOLLOW BUILDING TILE

Fire-Proof protection for Iron and Wood Columns and Girders. Special designs on application.

FOR THE INTERIOR

CONSTRUCTION OF BUILDINGS,

Great strength, combined with saving in space, and weight, is obtained by the use of our system of

Hollow Tile Floors, Partition Walls, Roofs, Ceilings, Etc.

Contracts taken for the erection of HOLLOW, SOLID and POROUS TILE-WORK in any part of the United States.

PIONEER FIRE-PROOF CONSTRUCTION CO.,

1545 CLARK STREET, CHICAGO.

Formerly T. E. OTTAWA TILE CO.,

MANUFACTURERS AND CONTRACTORS,

Dealers in every description of constructive Tile for Building Purposes.

Send for our descriptive Catalogue, giving full explanations, advantages, references, etc.

ISAAC M. HOLCOMB, President. CHARLES E. STREAT, Secretary.

Established 1873.

THE FIRE-PROOF BUILDING COMPANY,

OF NEW JERSEY.

MANUFACTURERS OF FIRE-PROOF BUILDING MATERIALS.

Porous Terra-Cotta Blocks, Hollow Burnt-Clay Bricks and Tell Lime Composition Blocks.

For Arches, Partitions, Furring, Deafening, Roofing, etc.

BUILDERS SUPPLIED.

Office, 229 BROADWAY, (Rooms 12, 13 and 14,) NEW YORK, N. Y.

ESTABLISHED 1856.

HENRY MAURER,

Manufacturer of

FIRE-PROOF BUILDING MATERIAL

Of every description. Hollow Brick made of Clay for Flat Arches, Partitions, Furring, etc. Porous Terra-Cotta, Fire-Brick, etc., etc.

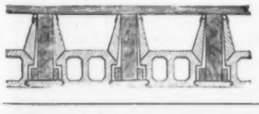
Works, PERTH AMBOY, N. J. Office and Depot, 420 EAST 23d STREET, New York.

LYONS' PATENT FIRE-PROOF

BUILDING MATERIAL,

FRANK LYONS, JR., Sole Manufacturer.

Office Room 60, Drexel Building, Cor. Wall and Broad Sts. Works, Nos. 57 to 65 Clason Ave., Brooklyn. New York Telephone, New 387. Brooklyn Telephone, Williamsburg, 391. Mechanics and Traders' Exchange, No. 14 Vesey St. (Box 82).



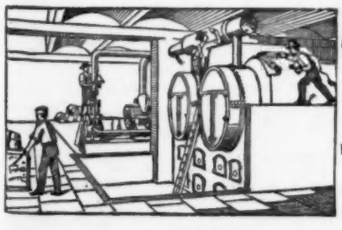
FIRE-PROOF FOR WOODEN BEAMS.

Patented August 8, 1882.

Fire-Proof Tiles for Arches, Partitions, and Furring. Also, Tiles for Protecting Wooden Floor Beams against Fire.

Artificial Stone and Rock Asphalt pavements.

JOHN J. SCHILLINGER, 420 East 92d Street, NEW YORK.



ASBESTOS FLOORING FELT.

Patented August 20, 1872.

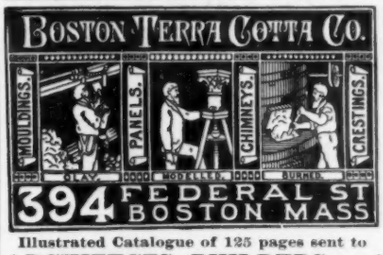
For Lining between Floors, under Slates, Shingles, Clapboards, etc.

Absolutely fire-proof, and unexcelled for deadening purposes. In rolls 44 inches wide. Manufactured only by

THE ASBESTOS PACKING CO.,

Offices: 169 CONGRESS ST., BOSTON. 33 JOHN STREET, NEW YORK.

Terra-Cotta.



Illustrated Catalogue of 125 pages sent to

ARCHITECTS, BUILDERS and OWNERS,

upon application accompanied by business card.

BALTIMORE

TERRA-COTTA CO.

Office: 30 Columbia St., Baltimore, Md.

MANUFACTURERS OF

ARCHITECTURAL TERRA-COTTA

MOULDED AND PRESSED BRICK.

PERTH AMBOY

TERRA-COTTA CO.

Nos. 80 and 81 Astor House, New York.

MANUFACTURERS OF

ARCHITECTURAL TERRA-COTTA.

BUFF AND COLORED BRICK, FIRE BRICK.

A. HALL

TERRA-COTTA CO.

Architectural Terra-Cotta, Fire-Brick, Furnace-Blocks, &c.

MOULDED, BUFF, AND COLORED BUILDING BRICK.

Perth Amboy, N. J.

Northwestern Terra-Cotta Works.

TRUE, BRUNKHORST & CO.,

ARCHITECTURAL

TERRA - COTTA.

Works: Corner Clybourn & Wrightwood Aves. **Chicago.** **City Office:** Room 20, McCormick Block

Formerly Cor. W. 15th and Laflin Sts.

Estimates given on application. Send for latest Catalogue, Price-List and Samples.

ORRIN D. PERSON,

123 5th Avenue, New York.

AKRON VITRIFIED ROOFING-TILE,

Finials, Ridge Cresting and Hip-Rolls.

Architectural Terra-Cotta.

Encaustic Glazed and Plain Tiles,

For Floors, Hearths and Decorations.

Enamelled Bricks, A large variety of colors on hand.

JAMES H. BEGGS & CO.,

Wilmington, Delaware, Terra-Cotta and Ornamental Brick Works,

WILMINGTON, DEL.

Brick and Terra-Cotta furnished from any Design. Bricks for Arches ground to suit any Radius. Equal in Quality and Color to Philadelphia Brick.

MONOGRAPH of AMERICAN ARCHITECTURE.—I.

HARVARD LAW-SCHOOL. H. H. Richardson, Architect.

18 Plates (Gelatine, from Nature), 13 x 16, in Portfolio. PRICE, $5.00.

TICKNOR & CO., 211 Tremont St., Boston.

WM. H. JACKSON & CO. 31 E. 17th St. New York.

North Side
Union Square,
2d door from
BROADWAY.

Established, 1827.

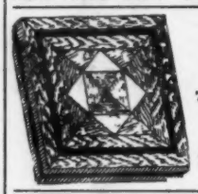
Designers and Manufacturers
OF
Grates, Fenders
— AND —
Chimney-Piece
Appurtenances.
In fact everything pertaining to Open Fireplaces.
Importers of Tile.
Foundries and Shops,
East 28th & East 29th Sts.
Fine Castings a Specialty.

FINE HAMMERED
Metal Work
Of every description and finish for Interiors.

PRIZE MEDALLISTS.

Exhibitions of 1862, 1865, 1867, 1872, 1873, and only Award and Medal for Noiseless, Self-Coiling Steel Shutters at Philadelphia, 1876; Paris, 1878; and Melbourne, 1881.

CLARK, BUNNETT & CO. (Limited)
Late CLARK & COMPANY,
Original Inventors and Sole Patentees of Noiseless
Self-Coiling, Revolving **STEEL SHUTTERS** Fire & Burglar Proof.
Also, ***Improved Rolling Wood Shutters,*** and ***Clark's Patent Metallic Venetian Blinds.***
The BEST in the Market. Send for Catalogues, etc., to
162 and 164 West 27th St. - - New York.



PARQUET FLOORS.
WM. HANNAM & CO.
7-8 inch tongued and grooved, European Styles. Solid and Substantial Also 3-8 inch Fancy Wood Carpet Floors.
293 FIFTH AVENUE, NEW YORK.
Wholesale and Retail.

PARQUET FLOORS.
The National Wood Manufacturing Co.,
Of 16 East 18th St., New York.
REMOVED to 129 5th AVE.
INLAID WOOD FLOORS, 5-16 and 7-8 inch thick.
Designs and estimates on application. Established 1867.

Real Bronze and Brass
House Trimmings,
Plain, Hammered, and Ornamental.
Catalogues on application.
The YALE & TOWNE MANUFACTURING CO., STAMFORD, CONN.
62 Reade St., New York. | 15 N. Sixth St., Philadelphia.
224 Franklin St., Boston. | 62 Lake St., Chicago.

BUNDY

RADIATORS.

N.J. STEEL & IRON CO.
TRENTON, N.J.
ROLLED IRON BEAMS,
CHANNELS, ANGLES & TEES.
COOPER, HEWITT & CO.
NEW YORK

ROOF CRESTING,
Iron Fence, Railings, Stable-Fittings,
BUILDERS' SPECIALTIES, Etc.
J. E. BOLLES & CO.,
Detroit, Mich., U. S. A.
Send for Catalogue. Mention this Paper.

Moule's Earth-Closet.
MYERS All China Water-Closet In one piece with Trap combined.

DECECO Siphon Water-Closet and large Stock PLUMBERS' SUPPLIES.
MYERS SANITARY DEPOT,
94 Beekman St., New York.

Stage Scenery for Rinks and Theatres
Send for List and Prices.
Lafayette W. Seavey, Studio, 216 E 9th St., N. Y.

AMERICAN AND GEM
SPRING HINGES.
Bronze, Brass & Iron,
In Various Styles, and SUPERIOR Finish.
Send for Catalogue.
VAN WAGONER & WILLIAMS CO.,
82 Beekman St., N. Y.

"Giant Metal Sash Chain."
MADE ONLY BY
THE SMITH & EGGE MANUFACTURING CO.,
BRIDGEPORT, CONN.

The most reliable and economical article in the market for the purpose. GREAT TENSILE STRENGTH Does not corrode; does not lose its vitality by continuous use, or exposure to the elements; runs over any pulley, and gives satisfaction wherever it is used. Fixtures made of steel wire, is very simple and easily applied. Prices very low. Samples sent to any architect in the United States, free, on application. Now in use in State House, Hartford; Providence City Hall; Singer Building, Chicago; J. C. Flood's, Menlo Park, Cal.; Vancornlear and Florence Flats, New York; Boreel Building, New York; new State War and Navy Departments, and Patent Office, Washington, D. C.; *Herald* Building, Boston, and very many other fine buildings in all parts of the United States.

CONTINENTAL
(FIRE)
INSURANCE COMPANY,
100 Broadway, New York.

Reserve for re-insurance (Fire Risks)	$1,928,299.35
Reserve for re-insurance (Inland Risks)	25,394.75
Reserve ample for all other claims.	449,586.00
Capital paid in in Cash	1,000,000.00
Net Surplus	1,535,221.82
Total Cash Assets Jan. 1, 1885	$4,938,501.92

CYRUS PECK, Secretary. H. H. LAMPORT, President.
Agencies throughout the United States.

SAYLOR'S Portland Cement. JOHNSON & WILSON AGENTS NEW YORK

SAYLOR'S PORTLAND CEMENT.
Strongest, Cheapest, Best, and Always Fresh.
JOHNSON & WILSON, Gen. Agts.,
For Sale by all dealers in masons' materials. **91 Liberty Street, New York.**
Sole Agents for **Styrian Tool Steel,** for the United States and Canada.
Send for New Descriptive Pamphlet.

ARTISTIC GRATES AND FENDERS.
OPEN FIREPLACES.
Direct Importers and Dealers in
Foreign and Domestic Tile
of every description and make, including new and original designs solely our own.
Fire Irons, Andirons, Brass Plaques, Jardinieres, &c.
The largest assortment and most elegant show-rooms America.
J. S. CONOVER & CO.,
28 and 30 West 23d Street, - - New York.